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Potomac River Basin

MARYLAND WATER SUPPLY AND DEMAND STUDY

Part 1
BASIC DATA

Volume 3
POTOMAC RIVER BASIN

MARYLAND STATE PLANNING DEPARTMENT

December 1967

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Part I

BASIC DATA

Volume 3

POTOMAC RIVER BASIN

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GEOLOGICAL SURVEY

UNITED STATES DEPARTMENT OF THE INTERIOR

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MARYLAND WATER SUPPLY AND DEMAND STUDY

Part I - BASIC DATA

Volume 3 - POTOMAC RIVER BASIN

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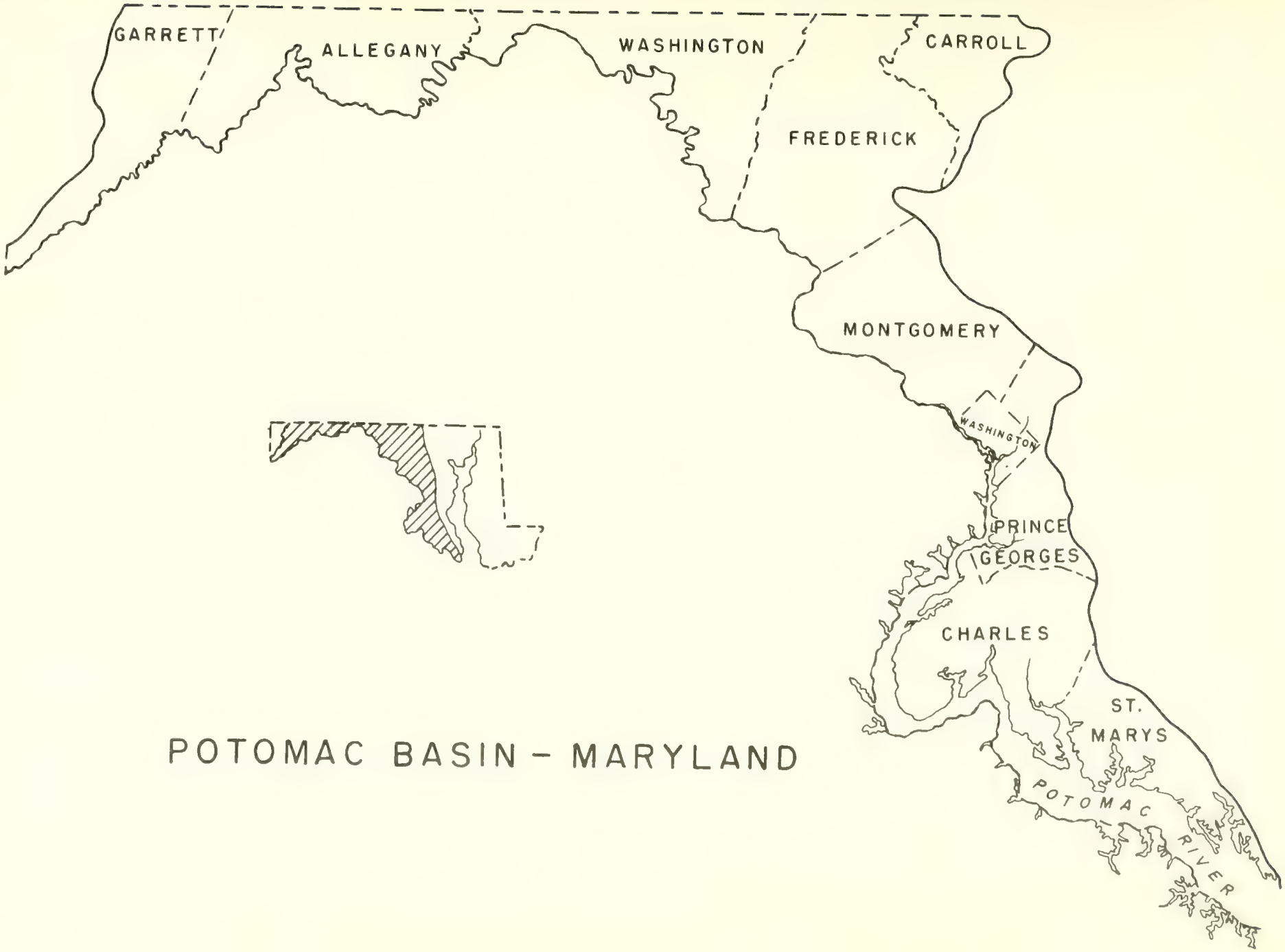

POTOMAC BASIN - MARYLAND

POTOMAC RIVER BASIN

INTRODUCTION

The Potomac River plays a major role in the history of Maryland. In 1634, only 26 years after Captain John Smith sailed up the Potomac estuary, the second Lord Baltimore, Cecil Calvert, founded the first English settlement in the Potomac basin at St. Mary's. As population of the colony increased, the Potomac Valley became an important gateway to the west.

Historically, the river has been the southern boundary of Maryland, originally separating it from Virginia, and later in 1862, separating it from West Virginia. The original charter to Lord Baltimore included the Potomac River to high-water mark on the south or Virginia shore, but in 1877, this boundary was changed to low-water line. Nevertheless, since the founding of the Colony of Maryland, the Potomac River has been completely within Maryland, and has remained so except for that part which forms the southwest boundary of the District of Columbia.

Today, the Potomac River and that part of its basin included in Maryland is a major source of water for Maryland. Thirty-four per cent of the land area of Maryland lies in the Potomac basin. The rainfall averaging more than 40 inches per year over the area is capable of supplying sufficient water for all foreseeable needs. About 17 inches of this rainfall leaves the Maryland part of the Potomac basin as runoff in streams and rivers.

Ground water is an important resource throughout the Potomac River basin. Although the larger cities and towns derive their public supplies from surface water, many smaller towns depend upon ground-water

supplies. The larger towns in Southern Maryland, all of the rural areas, individual, commercial, institutional, and military users throughout the basin all derive their water supply from ground-water sources.

Increasing demands, and recent adverse climatic conditions have taxed existing ground-water systems and it has become necessary for individuals and municipalities to consider additional or new water sources. These sources may consist of additional wells in existing well fields, new wells in presently untapped areas, or surface-water supplies. Water level fluctuations from both natural and man-made causes are adversely affecting some wells which were never particularly efficient, but which were adequate when less water was used.

GENERAL DESCRIPTION

The Potomac River and its tributaries draining 3,818 square miles of Maryland are a major source of water for the State. Thirty-four per cent of the land area of Maryland lies in the Potomac basin.

Physiography

The Maryland part of the Potomac basin includes parts of five physiographic provinces. These provinces generally strike across the basin in a broad belt in a northeast-southwest direction. From west to east, the provinces are the Appalachian Plateau province, the Valley and Ridge province, the Blue Ridge province, the Piedmont province, and the Coastal Plain province.

The Appalachian Plateau province consists of 331 square miles along the extreme west edge of the basin. The topography is rugged and streams are deeply incised with narrow flood plains. Minable coal beds in this area are an important consideration in water-resources management since coal mining frequently creates acid mine-drainage problems.

The area in the Valley and Ridge province, 662 square miles, consists of a series of parallel ridges and valleys. The eastern part of the province includes occasional wider valleys such as that of Conococheague Creek and the Hagerstown Valley. A trellis-type drainage pattern has developed in the northeast-southwest oriented valleys.

The Blue Ridge province contains some of the most rugged relief in Maryland. In contrast to the Valley and Ridge province, the 221 square miles of mountains of the Blue Ridge province lack the northeast-southwest parallel orientation, and the drainage pattern is dendritic rather than the trellis pattern.

These three westernmost physiographic provinces in Maryland are generally grouped together hydrologically and referred to as the Appalachian Region. Thus, the water-bearing characteristics of the aquifers in the Appalachian Plateau, Valley and Ridge, and Blue Ridge provinces in Garrett, Allegany, Washington, and part of Frederick counties are logically discussed in one section of this report.

From the east edge of the Blue Ridge province, the Piedmont province extends eastward to the Fall Line encompassing 1,281 square miles of Maryland. The Piedmont upland, in the western part of this province, is an area of moderate relief developed on deeply weathered crystalline rocks. The topographic relief is as much as 1,000 feet in this hilly rolling terrain. In the eastern part of the province the Piedmont lowland is an area of less relief, with streams flowing on relatively wide flood plains developed in somewhat weaker sedimentary rocks.

East of the Piedmont, the Coastal Plain province includes more than 1,363 square miles of that part of Southern Maryland in the lower part of the Potomac basin. The low, almost flat, surface of the Coastal Plain ranges in elevation from about 250 feet above sea level down to

the Chesapeake Bay. The Potomac River changes from a fast-flowing turbulent stream as it crosses the Fall Line to a wide tidal body of water meandering across the Coastal Plain. Tributary streams on the Coastal Plain are shallow and meandering.

Potomac River Basin Drainage Area

The basin encompasses 14,670 square miles, of which 26 per cent is in Maryland (see Table 1). The 3,818 square miles in Maryland comprises 36 per cent of the total area of the State, exclusive of Chesapeake Bay.

Table 1.--Area of the Potomac Basin, by States

State	Land and water area sq. mi.	Per cent of basin	Per cent of State included in basin
Virginia	5,723	39.0	14
Maryland	3,818	26.0	36
West Virginia	3,490	23.8	15
Pennsylvania	1,570	10.7	4
District of Columbia	69	0.5	100
Total	14,670	100.0	

Nine Maryland counties are either wholly or partly drained by the Potomac and its tributaries. In addition to the 3,346 square miles land area shown in Table 2, the Potomac estuary in Maryland adjacent to the counties of Charles and St. Mary's covers an area of 443 square miles. The other seven counties in the Potomac basin in Maryland contain less than 30 additional square miles of water area.

Table 2.--Maryland Counties in the Potomac River Basin

County	Land area in square miles		Per cent in basin
	Total	In basin	
Allegany	426	426	100
Carroll	453	222	49
Charles	458	425	93
Frederick	664	664	100
Garrett	662	243	37
Montgomery	493	433	88
Prince George's	486	231	48
St. Mary's	367	240	65
Washington	462	462	100

Major Subbasins

Nineteen tributaries of the Potomac River have drainage areas of more than 100 square miles. Of these, twelve drain parts of Maryland (see Table 3). The largest of the tributaries draining parts of Maryland is the North Branch of the Potomac. This subbasin ranks third in area of all tributaries in the Potomac basin. It is exceeded only by the Shenandoah River subbasin and the South Branch Potomac River subbasin. The Monocacy River subbasin, although 358 square miles less in size than the North Branch subbasin, covers almost as much total area in Maryland as does the North Branch.

Table 3.--Major Subbasins in the Potomac River Basin

Subbasin	State	Area in Square Miles
North Branch	Md.	764
	Pa. and W. Va.	564
	Pa., Md., and W. Va.	1,328*
South Branch	Va. and W. Va.	1,493*
Town Creek	Pa.	89
	Md.	67
	Pa. and Md.	156*
Little Cacapon River	W. Va.	114*
Sideling Hill Creek	Pa.	81
	Md.	23
	Pa. and Md.	104*
Cacapon River	W. Va.	683*
Great Tonoloway Creek	Pa.	112
	Md.	2
	Pa. and Md.	114*
Licking Creek	Pa.	186
	Md.	28
	Pa. and Md.	214*
Back Creek	Va. and W. Va.	274*
Conococheague Creek	Pa.	498
	Md.	66
	Pa. and Md.	564*
Opequon Creek	Va. and W. Va.	340*
Antietam Creek	Pa.	105
	Md.	187
	Pa. and Md.	292*
Shenandoah River	Va. and W. Va.	3,054*
Catoctin Creek	Md.	121*
Monocacy River	Pa.	228
	Md.	742
	Pa. and Md.	970*
Goose Creek	Va.	385*
Seneca Creek	Md.	129*
Anacostia River	D. C.	25
	Md.	145
	D. C. and Md.	170*
Wicomico River	Md.	247*

* Total area of subbasin

The Conococheague Creek subbasin, ranking fifth in the Potomac basin, having an area of 564 square miles, is the third major subbasin in Maryland. Other subbasins in Maryland include Town Creek, Sideling Hill Creek, Great Tonoloway Creek, Licking Creek, Antietam Creek, Catoctin Creek, Seneca Creek, Anacostia River, and Wicomico River subbasins ranging from 104 to 292 square miles.

The physical features of the subbasins vary with their physiographic location. Streams in the mountainous area generally have steep gradients and are deeply incised, whereas those in the Coastal Plain area generally have broad, shallow channels with flat gradients.

HYDROLOGY

Precipitation

The average annual precipitation over the Maryland part of the Potomac basin ranges from 36 inches along the eastern slope of the Allegheny Mountains to 52 inches in the lowlands of the lower basin.

Although higher average precipitation occurs in the summer months, the precipitation is more variable and less dependable than in winter. The summer rainfall totals are generally sufficient for agriculture purposes, but their variability can create severe drought conditions.

During the period 1886-1958, 25 hurricane storms crossed the Potomac basin. Although only a few of these storms were of full hurricane intensity, the remainder were classified as extratropical storms and generally brought heavy rains to the area.

Within the basin snowfall is generally light to moderate, except at the higher mountainous elevations, where annual totals of over 100 inches have occurred. Average annual snowfall ranges from about 10 inches in the lower part of the basin to about 70 to 80 inches in the Allegheny Plateau. The temperate climate, however, allows most of the snows to melt within reasonable periods of time after falling.

Evapotranspiration

Natural water losses in a river basin are the result of evaporation of water from land and water surfaces and transpiration of water by vegetation. Hydrologically, they are generally considered mutually co-related as evapotranspiration (Johnstone and Cross, 1949, p. 133). The potential for evapotransporation is related to temperature (Thornthwaite, 1928), but can be achieved only when moisture conditions are optimum. Actual evapotranspiration is generally determined from the

numerical difference between total precipitation and total runoff in a basin.

Estimated annual potential evapotranspiration for three sites in the basin are as follows: Frostburg, 27 inches; Frederick, 29 inches and College Park, 31 inches.

The water budget--the relation between potential evapotranspiration and precipitation--is shown in figure 1. As shown, a moisture deficiency of three to five inches during the growing season is applicable to most sites in the Maryland part of the Potomac basin. This deficiency represents the additional water needed during the growing season to supply that necessary for full evapotranspiration without taking water from ground-water storage. Actual water losses for three small tributaries are shown in Table 4. The water loss is the numerical difference between average precipitation and average runoff for each subbasin. The computation is based upon precipitation data at only one point in each subbasin and the water losses, therefore, may vary slightly from the indicated figures, depending upon how closely the point precipitation represents the basin average.

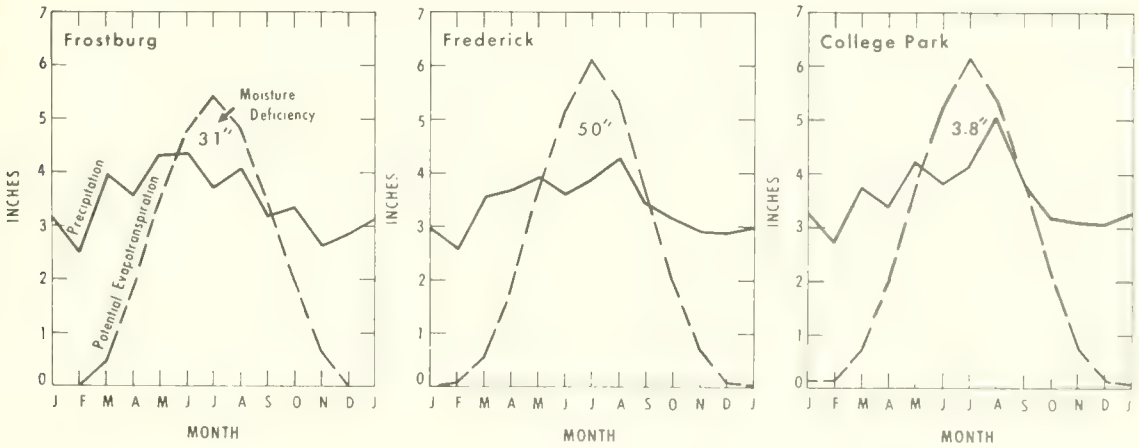

Figure 1. Diagrams showing water budget for three selected sites in the Potomac basin in Maryland.

Table 4.--Annual Water Losses for Selected Subbasins in the Potomac Basin in Maryland

Subbasin	Precipitation inches	Runoff inches	Water loss inches
Georges Creek	41.6	14.7	26.9
Linganore Creek	40.8	13.5	27.3
Northeast Branch Anacostia River	43.5	14.5	29.0

Agreement between actual water losses and potential evapotranspiration is good. The limited data indicate water losses in the Maryland part of the Potomac basin vary from zero to about three inches less than potential. This difference represents the average long-term soil moisture deficiency during the growing season.

Streamflow

Data on average streamflow are shown in Table 5. Included are all gaged sites in the Maryland and Pennsylvania part of the Potomac basin and along the main stem Potomac River having ten years or more of record. In addition to the average annual flow, the table also lists the average flow per square mile and the standard deviation of the annual flows.

The distribution of annual runoff is shown in figure 2. It is based upon streamflow records adjusted to the 1931-55 base period, precipitation data, and elevation as an orographic factor. Except for two high areas of runoff in the mountainous region, runoff is moderately uniform, averaging 12 to 16 inches over the Maryland part of the Potomac basin. The greater differences indicated in the cfs per square mile column of Table 5 probably reflect more the differences related to the variable periods of record rather than areal differences.

Table 5 .-Average annual streamflow at gaged sites in the Maryland and Pennsylvania parts of the Potomac basin and along the main stem Potomac River.

Station Number	Stream and location	Period of record	Average annual streamflow		Standard deviation
			cfs	cfs per sq. mi.	cfs
5950	North Branch Potomac River at Steyer, Md.	1956-63.	168	2.30	----
5955	North Branch Potomac River at Kitzmiller, Md.	1949-63.	437	1.94	----
5960	North Branch Potomac River at Bloomington, Md.	1924-27; 1929-50.	492[a]	1.71	36.4
5965	Savage River near Barton, Md.	1948-63.	74.1	1.51	----
5970	Crabtree Creek near Swanton, Md.	1948-63.	29.3	1.75	----
5975	Savage River below Savage River Dam near Bloomington	1948-63.	164	1.55	----
5980	Savage River at Bloomington, Md.	1924-27; 1929-50.	163	1.42	----
5985	North Branch Potomac River at Luke, Md. (at Piedmont, W. Va.)	1899-1905; 1949-63.	696	1.72	----
5990	Georges Creek at Franklin (Westernport), Md.	1905-6; 1929-63.	78.0	1.08	22.6
6000	North Branch Potomac River at Pinto, Md.	1938-63.	875	1.47	----
6010	Wills Creek below Hyndman, Pa.	1951- 63.	190	1.30	----
6015	Wills Creek near (at) Cumberland, Md.	1929-63.	315	1.28	86.1
6030	North Branch Potomac River near Cumberland, Md.	1929-63.	1,220	1.39	271
6035	Evitts Creek near Centerville (Bedford Valley), Pa.	1932-63.	30.5	1.01	9.5
6090	Town Creek near Oldtown, Md.	1928-35.	123	.83	----
6095	Sawpit Run near Oldtown, Md.	1947-58.	4.11	.82[b]	----
6100	Potomac River at Paw Paw, W. Va.	1938-63.	3,120	1.00	----
6125	Little Tonoloway (Tonoloway) Creek near Hancock, Md.	1947-63.	15.3	.91	----
6130	Potomac River at Hancock, Md.	1932-63.	3,999	.98	1,119
6135	Licking Creek near Sylvan, Pa.	1930-42.	106	1.05	----
6145	Conococheague Creek at Fairview, Md.	1928-63.	561	1.14	163
6180	Potomac River at Shepherdstown, W. Va.	1928-53.	5,804	.98	1,543
6195	Antietam Creek near Sharpsburg, Md.	1897-1905; 1928-63.	265[c]	.94	89.3
6370	Little Catoctin Creek at Harmony, Md.	1947-58.	10.1	1.13[b]	----
6375	Catoctin Creek near Middletown, Md.	1947-63.	71.5	1.07	----
6385	Potomac River at Point of Rocks, Md.	1895-63.	9,215	.95	2,776
6390	Monocacy River at Bridgeport, Md.	1942-63.	195	1.13	----
6395	Big Pipe Creek at Bruceville, Md.	1947-63.	105	1.03	----
6400	Little Pipe Creek at Avondale, Md.	1947-56.	9.21[c]	1.14	----
6405	Owens Creek at Lantz, Md.	1931-63.	8.83	1.49	2.7
6410	Hunting Creek at Jimtown, Md.	1949-63.	23.6	1.28	----
6415	Fishing Creek near Lewistown, Md.	1947-63.	10.8	1.48	----
6420	Monocacy River near (at) Frederick, Md.	1896-1930.	943	1.42	343
6425	Linganore Creek near Frederick, Md.	1934-63.	81.8	.99	22.6
6430	Monocacy River at Jug Bridge near Frederick, Md.	1929-63.	886	1.08	279
6435	Bennett Creek at Park Mills, Md.	1948-58.	65.8	1.05	----
6445	Great Seneca Creek (head of Seneca Creek) near Gaithersburg, Md.	1925-31.	36.6	.89	----
6450	Seneca Creek at Dawsonville, Md.	1930-63.	92.3	.91	32.1
6452	Watts Branch at Rockville, Md.	1957-63.	3.22	.87	----
6465	Potomac River near Washington, D. C.	1930-63.	11,040	.96	3,308
6480	Rock Creek at Sherrill Drive, Washington, D. C.	1929-63.	55.9	.90	19.6
6495	Northeast Branch Anacostia River at Riverdale, Md.	1938-63.	77.7	1.07	22.0
6505	Northwest Branch Anacostia River near Colesville	1938-63.	22.1	1.04	----
6510	Northwest Branch Anacostia River near Hyattsville	1938-63.	39.5	.80	----
6535	Henson Creek (head of Broad Creek) at Oxon Hill, Md.	1948-63.	19.5	1.11	----
6580	Mattawoman Creek near Pomonkey, Md.	1949-63.	57.2	.99	----
6610	Chaptico Creek at Chaptico, Md.	1947-63.	10.7	1.00	----
6615	St. Marys River at Great Mills, Md.	1946-63.	25.0	1.04	----

a Unadjusted for storage
b Approximate
c Adjusted for diversion

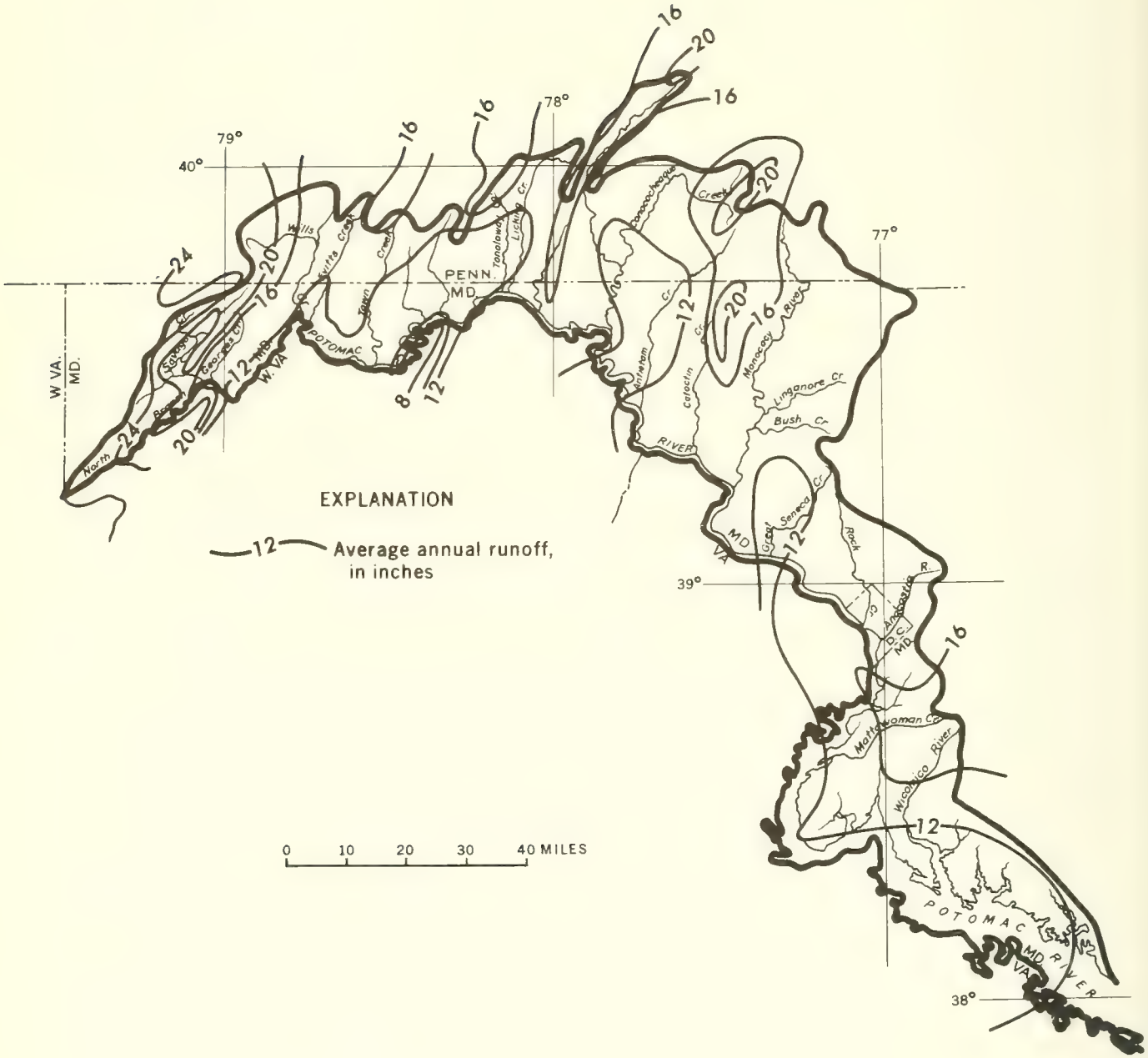

Figure 2. Map showing distribution of average annual runoff in the Potomac River basin in Maryland.

Low Flows

To provide statistical estimates of minimum streamflows for various recurrence time intervals, up to 50 years, low flow data have been interpreted by Darling (1962). Table 6 summarizes this data for the seven-day time period. The seven-day average rather than the minimum day is considered a more representative value of normal conditions in that it tends to minimize the effect of temporary conditions of storage or regulation.

Table 6

Low-flow Frequency Data for Selected Gaging Sites

in the Maryland Part of the Potomac Basin (Data from Darling, 1962)

Station Name	Number	Period of 7 consecutive days Lowest average flow in cfs for indicated recurrence interval in years			
		1.03	2	10	50
North Branch Potomac River at Kitzmiller, Md.	5955	78	32	14	1.5
North Branch Potomac River at Bloomington, Md.	5960	88	41	20	7.8
Savage River near Barton, Md.	5965	8.0	3.1	1.2	.5
Crabtree Creek near Swanton, Md.	5970	4.2	1.6	1.0	.7
Savage River at Bloomington, Md.	5980	18	5.3	1.8	.7
North Branch Potomac River at Luke, Md.	5985	220	94	48	21
Georges Creek at Franklin, Md.	5990	11	5.4	2.7	1.5
a North Branch Potomac River at Pinto, Md.	6000	138	62	22	4.4
b North Branch Potomac River at Pinto, Md.	6000	257	113	54	28
Wills Creek near Cumberland, Md.	6015	55	22	12	7.6
a North Branch Potomac River near Cumberland, Md.	6030	201	102	42	11
b North Branch Potomac River near Cumberland, Md.	6030	333	140	93	66
Town Creek near Oldtown, Md.	6090	14	4.0	1.3	.4
Sawpit Run near Oldtown, Md.	6095	.1	0	0	0
Little Tonoloway Creek near Hancock, Md.	6125	1.6	.1	0	0
Potomac River at Hancock, Md.	6130	665	335	222	171
Conococheague Creek at Fairview, Md.	6145	156	86	54	36
Antietam Creek near Sharpsburg, Md.	6195	156	93	72	60
Little Catoctin Creek at Harmony, Md.	6370	2.4	1.0	.5	.2
Catoctin Creek near Middletown, Md.	6375	19	3.7	.8	.3
Potomac River at Point of Rocks, Md.	6385	2,330	1,270	837	640
Monocacy River at Bridgeport, Md.	6390	20	3.2	.2	0
Big Pipe Creek at Bruceville, Md.	6395	44	17	7.2	3.4
Little Pipe Creek at Avondale, Md.	6400	5.8	3.9	3.1	2.5
Owens Creek at Lantz, Md.	6405	2.9	.6	.1	0
Hunting Creek at Jimtown, Md.	6410	5.2	2.2	.9	.4
Fishing Creek near Lewistown, Md.	6415	4.7	1.5	.7	.3
Monocacy River near Frederick, Md.	6420	198	76	34	19
Linganore Creek near Frederick, Md.	6425	37	17	8.0	4.2
Monocacy River at Jug Bridge near Frederick, Md.	6430	262	105	50	29
Bennett Creek at Park Mills, Md.	6435	23	10	5.8	2.6
Great Seneca Creek near Gaithersburg, Md.	6445	21	7.1	1.6	.4
Seneca Creek at Dawsonville, Md.	6450	56	22	6.4	1.2
Little Falls Branch near Bethesda, Md.	6470	.5	.2	0	0
Northeast Branch Anacostia River at Riverdale, Md.	6495	27	13	6.4	3.0
c Northwest Branch Anacostia River near Colesville, Md.	6505	9.8	3.7	1.0	.3
d Northwest Branch Anacostia River near Colesville, Md.	6505	16	9.4	4.4	1.1
Northwest Branch Anacostia River near Hyattsville, Md.	6510	8.5	4.0	1.5	.2
Henson Creek at Oxon Hill, Md.	6535	7.2	1.6	.2	0
Mattawoman Creek near Pomonkey, Md.	6580	9.2	0	0	0
Chaptico Creek at Chaptico, Md.	6610	3.8	.6	0	0
St. Marys River at Great Mills, Md.	6615	6.9	3.1	1.8	1.1

a Prior to December 1950
b After December 1950
c Prior to August 12, 1939
d After August 12, 1939

SURFACE WATERS

The principal water resource of the Potomac basin is surface water. Except for rural domestic supplies and some local ground-water use, most of the population above Washington, D. C. is served by water withdrawn from streams. In the lower part of the basin in the Coastal Plain, ground water is the main source of supply.

Streams

Appendix A includes a list of streams and estuaries making up the surface drainage system of the Potomac River basin. For each stream listed in Appendix A, the following items are reported: the distances in river miles from mouth of waterway to stream gaging stations, to water intakes, to waste outfalls and to other significant geographic features. Drainage areas are listed for selected locations. A condensed list including stream-gaging stations, water withdrawn and wastes discharged is given in Appendix B. For a more detailed description of this material refer to the General Reference Section*--DESCRIPTION OF APPENDICES.

* In this report, reference is made to a General Reference Section, this section is found in the Summary Volume (Vol. 6).

Reservoirs

Appendix C lists reservoirs, lakes and ponds in the Maryland part of the Potomac River basin. There are no large natural lakes in this area. The largest reservoir in Maryland in the Potomac River basin is on the Savage River. Two of the more important impoundments in the basin, Lakes Gordon and Koons on Evitts Creek are in Pennsylvania, although they supply water for Cumberland and adjacent towns in Maryland.

Estuaries

The Potomac estuary is a significant resource in Maryland and has great value for use in industrial cooling and for instream uses such as recreation, navigation, fishing, and waste disposal. The Potomac River is tidal for 116 miles from near Chain Bridge at Washington, D. C., to Chesapeake Bay. The 18-mile reach from Chain Bridge extending downstream to Fort Washington will almost always contain fresh water (less than 250 ppm--parts per million--chloride). The volume of water in the estuary from Chain Bridge to Cornwallis Neck has been computed by Durfor (1961), and at mean low water, the capacity of the estuary between Chain Bridge and Fort Washington is about 4 billion cubic feet or 30 billion gallons. Although the estuary at Fort Washington is mostly fresh water, some sea water will move upstream from there occasionally, and the Federal Water Pollution Control Administration reported that the chloride content at Memorial Bridge at Washington reached a high of 50 mg/l (milligrams per liter) in late autumn 1964. Normally, the chloride content at Memorial Bridge is less than 30 mg/l.

The low-tide capacity of the 13-mile reach from Fort Washington to Cornwallis Neck is about 9.8 billion cubic feet or 73 billion gallons. In this reach of the estuary, the range of chloride concentration is much larger. Chloride concentrations at Indian Head, Maryland have been reported as high as 3,700 mg/l (in 1930), but during high flows the chloride concentration has dropped to 10 mg/l.

The relative influence of the river and the tide in the estuary may be approximated by the ratio $Q/(Q + V/T)$ where Q is the river discharge, V is the volume between low and high tides and T is the time of a tidal cycle (13.5 hr.). The river discharge becomes a smaller part of the total water movement at each point farther downstream. At low flows--river

discharge of 1,000 cfs (cubic feet per second)--the estuary below Roosevelt Island is dominantly tidal. At the mean river discharge of 11,000 cfs, the discharge is approximately equal to the tidal flow, 10 miles downstream from Chain Bridge. A graphic portrayal of ratios of river to tidal flow is given by Durum and Langbein (1966).

The ebb and flow of the tide limit the flushing capability of the Potomac River and are important to the disposal of wastes. Naturally, the flushing capacity of the estuary is greater at higher river discharge rates. The time necessary to flush any section of the estuary is dependent not only on the streamflow, but also on the range of tide and the duration of low flow. Computations by several methods show that insufficient information is available to give precise answers on time of travel in the estuary under the full range of probable conditions. However, Durfor (1961) reported the time to flush the 10-mile reach of the Potomac River adjacent to Fort Belvoir varies from a day or two at high-flow rates to several weeks at low-flow rates. He computed that the tide reversed 52 times between Fort Washington and Glymont at a discharge rate of 6,000 cfs. From this computation, it appears that pollution added at Fort Washington at this flow may pass its point of introduction eight or nine times before it passes completely out of the area.

GROUND WATER

Throughout about 75 per cent of the Potomac River basin, the majority of municipal and industrial water supplies are derived from surface water sources. In the remaining 25 per cent of the basin, that portion that falls within the Coastal Plain physiographic province, ground water is the major source for water supplies. Table 7 is a summary of generalized hydrologic characteristics of the important aquifers found in the major geographic regions of the basin.

The occurrence, availability, and quality of ground water are controlled by the geology, and hydrology of the area. Different aquifers in a given area or the same aquifer in a different topographic and/or structural geological setting will have different hydrologic characteristics which, in turn, affect the occurrence of ground water.

Small quantities of ground water sufficient for domestic and limited farm use can be obtained throughout the basin. Quantities sufficient for small industrial, municipal, and agricultural use, however, are more limited. Each physiographic province in the Potomac River basin, however, has one or more aquifers that are capable of yielding water in excess of 100 gpm (gallons per minute) to properly located and constructed wells.

In the Potomac River basin in the area west of the Fall Line, the base flow of surface streams indicate that about 300,000 gpd (gallons per day) per square mile of ground water could be perennially developed. To develop this amount of ground water in most of this area, however, would necessitate an extensive array of low-yielding wells.

In the Coastal Plain part of the Potomac River basin, indications are that over 500,000 gpd per square mile of ground water are available. In this area, the hydrologic characteristics of the aquifers are such that the development of large supplies are much more feasible.

Table 7.—Aquifers in the Potomac River basin of Maryland that are capable of producing in excess of 20 gpm

Rock Type	Appalachian Plateau Province			Ridge and Valley Province			Blue Ridge and Piedmont Provinces			Coastal Plain Province		
	Geologic Units	Water bearing Properties: Avg. yield of wells (gpm)	Water bearing Properties: Max. reported yield of wells (gpm)	Geologic Units	Water bearing Properties: Avg. yield of wells (gpm)	Water bearing Properties: Max. reported yield of wells (gpm)	Geologic Units	Water bearing Properties: Avg. yield of wells (gpm)	Water bearing Properties: Max. reported yield of wells (gpm)	Geologic Units	Water bearing Properties: Avg. yield of wells (gpm)	Water bearing Properties: Max. reported yield of wells (gpm)
Cobbles and gravel	Recent alluvium and valley fill.		1/	Recent alluvium and valley fill.		1/	Mountain wash and stream alluvium.		2/			
Unconsolidated sands and glauconite										Upland deposits	5	25
										Lowland deposits	10	350
										Piney Point Fm.	30+	190
										Nanjemoy Fm.	30+	60
										Aquia Greensand	100+	350
										Magothy Fm.	60+	250
										Patapsco Fm.	50+	150
										Patuxent Fm.	150+	439
Sandstones and shales	Conemaugh Fm.	15	75	Monongahela Fm.	--	20						
	Allegheny Fm.	14	40	Conemaugh Fm.	--	60						
	Pottsville Fm.	38	200	Pottsville and Allegheny undif.	--	170						
	Mauch Chunk Fm.	15	24	Pocono Fm.	--	65						
	Greenbrier Fm.	14	20	Hampshire Fm.	--	25						
	Pocono Fm.	13	130	Jennings Fm.	--	50						
	Hampshire Fm.	14	57	Romney Sh.	--	20						
	Jennings Fm.	10	40	Oriskany Ss.	--	120						
				Wills Creek Sh.	--	130						
				McKenzie Fm.	--	20						
				Martinsburg Sh.	--	50						
				Harpers Fm.	--	20						

Table 7.--Aquifers in the Potomac River basin of Maryland that are capable of producing in excess of 20 gpm--Continued

Rock Type	Appalachian Plateau Province			Ridge and Valley Province			Blue Ridge and Piedmont Provinces			Coastal Plain Province		
	Geologic Units	Water bearing Properties: Avg. yield of wells (gpm)	Water bearing Properties: Max. reported yield of wells (gpm)	Geologic Units	Water bearing Properties: Avg. yield of wells (gpm)	Water bearing Properties: Max. reported yield of wells (gpm)	Geologic Units	Water bearing Properties: Avg. yield of wells (gpm)	Water bearing Properties: Max. reported yield of wells (gpm)	Geologic Units	Water bearing Properties: Avg. yield of wells (gpm)	Water bearing Properties: Max. reported yield of wells (gpm)
Limestones, dolomite and marble				Chambersburg Ls.	--	20	Tomstown Dol.	20	30			
				Pinesburg Station Dol.	--	25	Frederick Ls.	25	275			
				Rockdale Run Fm.	--	60	Grove Ls.	32	150			
				Stonehenge Grp.	--	400	Wakefield Marble	106	575			
				Conococheague Ls.	--	400	Silver Run Ls.	21	80			
				Elbrook Ls.	--	35						
				Tomstown Dol.	--	300						
Quartzite							Loudoun Fm.	6	20			
							Weverton Qtzte.	35	80			
							Antietam Qtzte.	9	20			
							Peters Creek Qtzte.	16	100			
Gneiss, schist and phyllite							Wissahickon Fm.	54	183			
							Marburg Schist	17	223			
							Harpers Phyllite	10	70			
							Ijamsville Phyllite	8	20			
							Urbana Phyllite	11	35			
Gabbro & other igneous rocks				Catoctin Metabasalt	--	60	Catoctin Metabasalt	14	160			
							Sams Creek Metabasalt	8	20			
							Sykesville Fm.	23	60			

1/ Limited distribution and thickness. Not important as an aquifer.

2/ Generally of minor importance due to limited distribution and thickness.

SURFACE-WATER USES

Use of surface water may be classified as withdrawal or non-withdrawal, and the quality of the used water is frequently deteriorated by either. Definite measurements are seldom made, however, of the quantity of water serving for the non-withdrawal uses of navigation, waste disposal, recreation, and fishing--all of which are important in the Potomac River basin.

Appendix B lists about a hundred intakes indicating a total of over 1,500 mgd withdrawn from the Potomac River and its tributaries. Over 1,300 mgd is reportedly withdrawn for industrial uses and over 230 mgd for municipal supplies. The withdrawals reported in Appendix B, however, include many intakes in the adjacent States of Pennsylvania, Virginia, and West Virginia and the municipal supply for the District of Columbia. The District of Columbia system alone had an average withdrawal of 168 mgd (U. S. Public Health Service, 1964).

One of the larger public supplies from the Potomac River in Maryland is not listed in Appendix B. The Washington Suburban Sanitary Commission recently reported (WSSC, 1966) that they served about 900,000 people in Maryland and, although the Commission obtains a considerable percentage of its water from the Patuxent River, during 1966 their production capacity from the Potomac River was boosted from 30 to 70 mgd and further increases are underway. Other municipalities in Maryland and estimates of current withdrawal of surface water are: Cumberland (13.7 mgd), Hagerstown (7.8 mgd), Frederick (3 mgd, from Potomac River tributaries), Rockville (4 mgd). The total surface water withdrawn annually in the Maryland portion of the Potomac River basin is estimated as follows:

Use	Mgd
Public supply	101
Industrial self-supplies	237
Public utility (cooling water)	495
(other)	12
Irrigation	1.5
	846.5

Some additional detail on water supply and demand determined by Federal Interdepartmental Task Force work groups is given on pages 61 - 63.

The amount of water used for irrigation is based on 3,050 acres that are irrigated in the Maryland part of the Potomac basin. This acreage is covered by an average depth of 0.61 foot of water per year. It should also be noted that the withdrawal rate of 1.5 mgd annually would be a withdrawal of 9 mgd average use in an irrigation season of 60 days.

GROUND-WATER USE

There are no accurate figures available on the total use of ground water in the basin. Therefore, it is necessary to use data available from scattered measurements and then to estimate the remainder from population statistics and other indirect factors.

Since ground water used for domestic and farm purposes is not metered, estimates were made on the basis of an average use per capita applied to that segment of the population not served by a public supply. Population was figured by individual election districts where it was necessary to compute statistics for only parts of counties.

Figures for ground-water pumpage for public supplies were either adapted from the 1960 ground-water use survey made by the U. S. Geological Survey, or taken from data obtained from the Maryland State Department of Health. As only a few towns meter their water, accurate statistics are not available.

Several sources for the ground-water use figures were employed in deriving totals for commercial and industrial users. The basic source was the table of industrial water-use data of the Public Health Service of the U. S. Department of Health, Education, and Welfare. Other sources such as ground-water appropriation permits in the files of the Maryland Department of Water Resources, existing ground-water reports, and personal knowledge, also were used.

In some cases, reasonably accurate figures are available for ground-water use at military establishments and various institutions such as schools or religious institutions.

As in the case of water for other uses, little if any of the pumpage for irrigation is metered. In addition, the quantity withdrawn

varies widely, depending upon the rainfall of a particular growing season. Included as irrigation is water used on large tracts of grass, such as golf courses, as well as water used for irrigating crops. The estimate includes data determined by Meyer (1957) in preparation for his paper on supplemental irrigation in Maryland, to which have been added quantities granted to various users by the State ground-water appropriation permits (Appendix F).

The following data on ground-water use in the Potomac River basin in Maryland in 1966 are believed to be of the correct order of magnitude:

Use	Mgd
Domestic and farm	13
Public supply	6
Commercial and industrial	4
Institutional and military	6
Irrigation	0.3
	29.3

WATER QUALITY

Water-Quality Criteria

Minimum water-quality criteria of special interest in this section were developed by the ICPRB (Interstate Commission on the Potomac River Basin). The criteria were prepared for each of four classes of water use applicable to all tributary streams and the main stem of the Potomac River upstream from the confluence of the Monocacy River. These criteria were used only to delineate concentrations of the various water quality indicators to serve as a guide for evaluating the minimum quality required for various classes of water use listed.

In addition to the above-mentioned criteria, the Commission on January 22, 1958, adopted specific water-quality objectives and criteria for the Potomac River from the confluence of the Monocacy River downstream to Hallowing Point. Briefly, the objectives were designed to provide a quality of water in the Potomac that is compatible with the principal uses the people desire to make of the water.

Principal features of these criteria are that the water quality shall be maintained so that the analyses of most of the samples fall within the following limits:

Reach of Rivers	Coliform Group	D. O.
Monocacy River to Great Falls		
Great Falls to Little Falls	MPN (most probable number) not to exceed 2,000 per 100 ml	Monthly median not less than 6.5 ppm with no D. O. below 4.0 ppm
Little Falls to Key Bridge		
Key Bridge to Fort Washington	MPN not to exceed 10,000 per 100 ml	Monthly average not less than 5.0 ppm with no D.O. below 4.0 ppm
Fort Washington to Hallowing Point	MPN not to exceed 2,000 per 100 ml	Monthly average not less than 6.5 ppm with no D.O. below 4.0 ppm

For all 5 reaches of the Potomac, the pH shall range between 6.5 and 8.5 and after opportunity for good mixing in the river, the turbidity should not be appreciably changed.

Additional criteria applicable to all surface water streams in Maryland have been used as guides by the Maryland Department of Water Resources (MDWR). These criteria were developed in 1949 by the former Water Pollution Control Commission, but not officially assigned as water quality objectives.

Use of the existing criteria, even as guidelines, will be discontinued upon promulgation of water-quality standards by the basin states and the District of Columbia in accordance with the Federal Water Pollution Control Act (PL 84-660) as amended in 1965 (Water Quality Act of 1965-PL 90-234) and again in 1966 (Clean Water Restoration Act of 1966-PL 89-753). A more detailed discussion of the program will be found in the General Reference Volume. In summary, the legislation requires the

states to establish water-quality standards and a plan for their implementation by June 30, 1967. If the states do not comply, or, if the standards and/or the implementation plan are not satisfactory to the Secretary of the Interior, he can establish the standards and the plan. More significant is the fact that the grant program for sewage-treatment facilities is related to state compliance with the federal legislation.

The Interdepartmental Task Force on the Potomac, Sub-Task Force on Water Quality, whose work is discussed in more detail on pages 61 - 63 reached several conclusions concerning appropriate criteria. These conclusions on principal water-quality requirements are that: dissolved oxygen should not be less than 4 mg/l 90% of the time nor less than 3 mg/l at any time; dissolved phosphorus should not be greater than 0.1 mg/l; and coliform bacteria in swimming water areas should, on the basis of existing State Health Department requirements, be not more than 2,400 per 100 milliliters for 90% of the time nor more than 1,000 for 50% of the time. Water intended for use as a public water supply source should meet the Public Health Service Drinking Water Standards. Recreational and environmental waters should be free of visible floating or suspended solids, oils and greases, heavy growths of rooted aquatic plants, slimes, and high concentrations of algae, and should not be discolored nor excessively turbid. Swimming water areas should be free of hidden hazards or other dangers. Water temperatures should not be elevated by industrial cooling processes to such a degree as to interfere with aquatic life.

Maryland submitted its proposed standards and implementation plan by the deadline, and they were approved by the Secretary of the Interior (August 1967). The responsibility for preparing the State program was delegated to the Water Resources Commission which will promulgate the standards as rules and regulations of the Department of Water Resources.

The standard for any given waters of the State is actually a composite of three parts: an effluent discharge requirement as determined under existing rules and regulations of the Department of Water Resources; a minimum in-stream quality requirement for all waters of the State; and an in-stream quality requirement based on specific water uses to be protected. When the various water use combinations were evaluated insofar as the limiting water-quality criteria required for each use, three major water use groups evolved: an A group containing shellfish harvesting, a B group containing public or municipal water supply, and a C group containing either water contact recreation or propagation of fish, other aquatic life and wildlife. For each of the three groups, standards for coliform-organism count, dissolved oxygen, acidity, and temperature were delineated.

More detail on water-quality standards is found in the General Reference Volume.

Sources of Data

Numerous special water-quality surveys have been made in the Potomac River basin, in addition to regular sampling and monitoring programs by several industries and governmental jurisdictions. Much of the information and discussion on surface water quality in this report has been abstracted from a summary report of the Chesapeake Bay-Susquehanna River Basins Project, by FWPCA, Charlottesville, Va. (1965).

Among the systematic data collection and reporting programs are those by the ICPRB and the U. S. Department of the Interior. The annual report by ICPRB, entitled Potomac River Water Quality Network--Compilation of Data, includes for each network station the monthly averages for temperature, turbidity, alkalinity, pH, D.O. (dissolved oxygen),

B.O.D. (biochemical oxygen demand), total and coliform bacteria. The averages are based on several samples per month for a total of 70 stations in 1965; most of the stations are in Maryland. The U. S. Department of Interior, Geological Survey in cooperation with the Maryland Geological Survey is maintaining four stations in the Potomac River basin to determine daily suspended sediment discharge. Chemical characteristics are determined on a monthly basis at seven locations. The Federal Water Pollution Control Administration (formerly with the U. S. Department of Health, Education and Welfare, and since June 1966 with the U. S. Department of Interior) obtains data on chemical, physical, bacteriological and radiological determinations at four locations in the basin, two of which are in Maryland at Williamsport and Great Falls. All these data are published in annual compilations.

Several State agencies recently have conducted special water-quality surveys. A comprehensive investigation on the sources and effect of mine drainage on the water resources of Western Maryland was initiated in 1962 by the Maryland Department of Water Resources and the report in 3 Volumes, Western Maryland Mine Drainage Survey 1962-1965 by Thomas C. Hopkins, Jr., covers mine drainage in Garrett and Allegany counties.

In 1956 a comprehensive water-quality study of the Potomac basin was initiated by the Public Health Service at the request of the Corps of Engineers. The study was published as Volume V of the Corps' Potomac River Basin Report in 1962. In addition to water-quality data, the report projects low-flow augmentation needs for both water supply and water-quality requirements for the years 1985 and 2010. The previously mentioned summary report prepared by the Federal Water Pollution Control Administration in 1965 updates the water-quality data of the earlier report for the Maryland part of the basin.

In 1965 the Federal Interdepartmental Task Force under the direction of the Secretary of the Interior was created to reevaluate the 1962 Potomac basin report. The Water Quality Sub-Task Force completed its final report in February 1967, which, among its other findings, concurred with the earlier report in the need for low-flow augmentation for water quality in portions of the basin above the estuary. Alternatives for resolving the more complex water-quality problems of the estuary were discussed with the conclusion that a combination of remedial measures are needed: flow augmentation, additional treatment and dispersal of discharge points. This report and others are discussed in more detail under INTERSTATE ASPECTS.

Sediment Transport

The character and quantity of sediment transport are responsible for many engineering and economic factors that control the design of structures for reservoir storage, for irrigation works and for domestic and industrial usage. The problems associated with the processes of erosion transport and deposition of sediment have received increased attention in the Potomac River basin in recent years. Wark and Keller (1963) computed the average annual sediment discharge of numerous streams in the Potomac River basin as shown in Table 8. The estimated average annual sediment discharge of the Potomac River basin is 170 tons per square mile or about 2.5 million tons.

Construction, particularly in urban areas, is one of man's acitivities that contribute to the sediment problem. Construction activities are, however, quite limited in time and the variation in average annual sediment discharge for long-term periods within the State may be attributed chiefly to land use. Based on relative percentages of

Table 8.--Computed average annual sediment discharge of streams in the Potomac River basin (from Wark and Keller, 1963).

Station	Area Drainage (sq. mi.)	Average Annual Sediment Discharge	
		Tons	Tons per sq. mi.
Abram Creek at Oakmont, W. Va.	47.3	1,100	21
North Branch Potomac River at Kitzmiller, Md.	225	21,200	94
George's Creek at Franklin, Md.	72.4	15,000	207
New Creek near Keyser, W. Va.	45.7	1,600	35
North Branch Potomac River at Pinto, Md.	596	78,000	130
Wills Creek below Hyndman, Pa.	146	18,500	127
Patterson Creek near Headsville, W. Va.	219	18,400	84
North Fork of South Branch Potomac River at Cabins, W. Va.	314	7,630	24
South Branch Potomac River near Petersburg, W. Va.	642	18,500	29
South Fork of South Branch Potomac River near Moorefield, W. Va.	283	9,390	33
South Branch Potomac River near Springfield, W. Va.	1,471	157,000	107
Potomac River at Paw Paw, W. Va.	3,109	383,000	123
Cacapon River near Great Cacapon, W. Va.	677	43,600	64
Back Creek near Jones Springs, W. Va.	243	12,400	51
Conococheague Creek at Fairview, Md.	494	107,000	217
Opequon Creek near Martinsburg, W. Va.	272	26,400	97
Antietam Creek near Waynesboro, Pa.	93.5	5,600	60
Antietam Creek near Sharpsburg, Md.	281	54,200	193
South Fork Shenandoah River at Front Royal, Va.	1,638	209,000	128
North Fork Shenandoah River near Strasburg, Va.	772	83,200	107
Passage Creek at Buckton, Va.	87	4,660	54

Table 8.--Computed average annual sediment discharge of streams in the Potomac River basin (from Wark and Keller, 1963).--Continued

Station	Area Drainage (sq. mi.)	Average Annual Sediment Discharge	
		Tons	Tons per sq. mi.
Shenandoah River at Millville, W. Va.	3,040	365,000	120
Catoctin Creek near Middletown, Md.	66.9	31,200	47
Potomac River at Point of Rocks, Md.	9,651	1,090,000	113
Monocacy River at Bridgeport, Md.	173	39,800	230
Big Pipe Creek at Bruceville, Md.	102	44,800	440
Hunting Creek at Jimtown, Md.	18.4	2,840	154
Lingamore Creek near Frederick, Md.	82.3	30,500	370
Monocacy River at Jug Bridge near Frederick, Md.	817	267,000	327
Goose Creek near Leesburg, Va.	388	98,000	290
Seneca Creek at Dawsonville, Md.	101	32,300	320
Watts Branch at Rockville, Md.	3.7	1,910	516
Difficult Run near Great Falls, Va.	58	16,200	280
Little Falls Branch near Bethesda, Md.	4.1	9,530	2,320
Rock Creek at Sherrill Drive, Washington, D. C.	62.2	99,500	1,600
Northeast Branch Anacostia River at Riverdale, Md.	72.8	77,400	1,060
Northwest Branch Anacostia River near Colesville, Md.	21.3	10,000	470
Northwest Branch Anacostia River near Hyattsville, Md.	47.4	91,300	1,850
Henson Creek at Oxon Hill, Md.	16.7	36,000	2,160
Accotink Creek near Annandale, Va.	23.6	17,800	690
Bull Run near Manassas, Va.	147	21,400	146
Mattawoman Creek near Pomonkey, Md.	57.7	1,830	32

cropland and forest land, Wolman (1965) roughly estimated the sediment yields as follows:

Province	Mean annual sediment yield tons/square mile per year
Coastal Plain	150
Piedmont	324
Valley and Ridge	120
Allegheny Plateau	40

Water-Quality Problems

Problems of water quality may be divided into those which are caused by natural conditions such as geology, geography, topography and climate, and problems that are caused by man and aggravated by man's use of the water.

The quality of waters in the Potomac River basin varies largely according to the area considered. In the headwaters of the North Branch, a major concern is with acid mine drainage problems and some industrial pollution. In the lower estuary of the Potomac River, the greatest expressed concern has been with pollution caused by disposal of wastes from the growing metropolitan area and with natural salinity. Additional major causes of pollution associated particularly with land and farm drainage that are becoming a major problem are: sediment, plant growth nutrients, and pesticides. High nutrient concentrations bring about massive algal blooms that discolor the water, reduce its clarity, and, in general create a displeasing aesthetic appearance.

This section on water quality is divided into major reaches of the main stem Potomac and revelant tributaries from the headwaters to the estuary. Ground-water divides do not necessarily coincide with surface-water drainages, but quality of ground water is discussed

according to the physiographic province of which the drainage area of the reach of stream is considered. The water quality indicated refers to present (1966) conditions only. The extent of pollution because of man's activities is subject to change at any time.

Appalachian Region

Surface Water

North Branch Potomac River

Headwaters to Savage River--The North Branch Potomac River is polluted by mine drainage from active and abandoned mines from its headwaters to Savage River. Water draining from coal mine areas contains sulfuric acid. The sulfuric acid in the water originates from the pyrite and marcasite in coal and associated shale strata. These minerals are oxidized in the presence of air and water to form iron sulfate and sulfuric acid. The resulting water is low in pH, high in iron, manganese and sulfate. Such water is unsuitable for most uses without treatment.

Between the headwaters and the Savage River, Stony River is the only major tributary to the North Branch. Water entering the North Branch from Stony River is regulated by two reservoirs, so this water has little effect on water quality of the North Branch. Downstream, at Kitzmiller, a pH of 3.9 and a dissolved solids concentration of 128 ppm has been measured at a discharge of 97 cfs. Chemical analysis indicates that the water is a calcium sulfate type.

The only industrial waste discharges into streams in this area are from two coal washeries, one at Henry, West Virginia, and one at Bayard, West Virginia. At both locations, large lagoons have been constructed to first receive the waste wash water to settle out coal fines. Shallmar, Maryland, which uses untreated water from Wolfden Run, is the only surface-water supply in the area.

The North Branch of the Potomac receives untreated waste discharges from numerous households and small communities in the area. There are no sewage-treatment facilities in the sub-reach of the stream.

Savage River to New Creek--The Savage River contains water of good quality, although Aaron Run and another smaller tributary are polluted by acid mine drainage. The water released from Savage River Reservoir provides sufficient dilution for these tributaries. The regulated flow from the Savage River also helps to neutralize the water in North Branch.

The West Virginia Pulp and Paper Company withdraws 40 mgd (million gallons per day) from the North Branch at Luke, Maryland. Part of this water is treated chemically and filtered for industrial process and sanitary purposes. The town of Luke is supplied with this treated water. Westernport, Maryland, receives its public supply directly from Savage River Reservoir.

Several paper mill waste effluents are discharged directly to the North Branch without treatment. Their most significant characteristics being high alkalinity, B.O.D., and temperature. Water in the North Branch changes from a calcium sulfate type above Savage River to a sodium calcium sulfate type below the paper mill. The sanitary wastes from the paper mill, Westernport and Luke are treated at the Upper Potomac River Commission Waste Treatment Facility at Westernport, Maryland, which provides secondary treatment by an activated sludge process.

Georges Creek, which drains about 80 square miles, joins the North Branch Potomac River at Westernport. Direct mine drainage is added to Georges Creek throughout its 17-mile length, and sewage outfalls are numerous throughout the basin from households and small communities. The

Public Health Service has estimated that Piedmont, West Virginia discharges 190,000 gpd of untreated sewage from 2,400 persons.

Some small communities obtain their public water supply from tributaries of Georges Creek and provide only chlorination for treatment.

The acidity from Georges Creek has little effect on the quality of the North Branch, because of the alkaline water from the paper mill. However, the lime waste discharges from the West Virginia Pulp and Paper Company are scheduled to be discontinued.

New Creek to Wills Creek--This sub-reach of the North Branch shows the effect of the paper mill waste and the beginning of improvement of the water quality as the river is subjected to some natural aeration. Concentrations of B.O.D. are high in this area (a range of monthly means of 12.7 ppm to 23.7 ppm). The concentration of dissolved oxygen is also high. During the 1965 water year, the average monthly D.O. ranged from 3.1 to 13.5 ppm.

There are several community and industrial users of the water in this sub-reach; these are Bel Air, Barton's Dairy, Allegany Ballistics Laboratory of Hercules Powder Company, Mason's Dairy, Cresaptown, Celanese Fibers Company, Bowling Green, Kelly-Springfield Tire Company and the Potomac Edison Company. These industrial establishments use large quantities of water and return more than 625,000 gpd of sewage effluent to the North Branch Potomac.

Wills Creek to South Branch--The headwater of Wills Creek is in Pennsylvania where it receives untreated sewage before it flows into Maryland. Frostburg, Maryland, discharges part of its sewage into Jennings Run which is a tributary to Wills Creek. Braddock Run, another tributary to Wills Creek, receives pollution from mine drainage and sewage from La Vale, Maryland. However, an interceptor sewer is now under construction

to transport sewage from Frostburg and La Vale to Cumberland for treatment. No doubt, as this and similar projects are completed, the picture of pollution in the upper Potomac basin will change radically. At present, Wills Creek contains sufficient alkalinity to neutralize acid mine drainage from Jennings Run and Braddock Run. The Appalachian Stone Division of the Martin-Marietta Corporation withdraws water from Wills Creek for washing sand and gravel but returns the water to the stream after settling.

Evitts Creek is the source of public water supply for Cumberland, Maryland, which maintains two reservoirs on the creek in Pennsylvania. The water, a calcium bicarbonate type, from this stream is of good quality.

A sewage effluent of 5.0 mgd is discharged from the Cumberland treatment plant to the North Branch after primary treatment.

The chemical quality of water of the North Branch Potomac near Cumberland, Maryland (Wiley Ford Bridge) is better than that upstream, but high concentrations of calcium sulfate still indicate the extent of upstream pollution. The North Branch Potomac River and many of the Maryland tributaries from its headwaters to the confluence with the South Branch has a low pH, and in the lower reaches B.O.D. values of over 5 mg/l and an offensive odor most of the time.

South Branch to Conococheague Creek

Results of a special study of the Potomac River in the reach between Cumberland, Maryland, and Hancock, Maryland, are given in Table 9. This study was made in July 1965 by the Chesapeake Bay-Susquehanna River Basins Project. The data show an improved quality of water downstream from Oldtown. The hardness and dissolved solids are lower, and there is an increase in the concentration of dissolved oxygen.

The South Branch of the Potomac River contains water of good chemical quality which helps to improve the water in the Potomac downstream

Table 9.—Water quality data from a special study of the upper Potomac River -- The Public Health Service in 1965

Location	River Miles to Mouth of Potomac	Date	Time	Stream Flow (cfs)	Water Temp. (°C.)	D.O. (mg/l)	B.O.D.$_5$ (mg/l)	Coliform Bacteria (MPN/100 ml)	E. Coli Bacteria (MPN/100 ml)	Total Hardness (mg/l as $CaCO_3$)	Alkalinity (mg/l)	pH	Conductivity (Mmhos 25°C.)	Total Diss. Solids (mg/l)	Susp. Solids (mg/l)
Cumberland, Md.	304.7	7/14	0910	200	27.0	3.8	0.7	43,000	4,600	240	78	7.3	660	465	12
		7/15	0310	166	28.5	3.2	1.1	—	—	220	74	7.8	610	437	10
(Wiley Ford Bridge)		7/15	1430	166	29.5	3.9	2.5	—	—	220	70	8.4	610	431	22
		7/16	1210	138	27.9	3.5	3.0	2,300	3	220	79	7.3	660	476	10
		Average		168	28.2	3.6	1.8	9,900*	120*	230	75	7.7*	635	452	13
Below Cumberland	296.3	7/14	1045	--	26.0	3.0	0.7	2,300	2,300	250	87	7.2	810	547	3
		7/15	0355	--	27.0	3.8	0.9	—	—	280	82	7.2	750	552	--
(Pittsburgh Plate-		7/15	1500	--	28.0	4.1	1.0	—	—	240	80	7.3	670	476	12
Glass Company Dam)		7/16	1115	--	26.5	3.8	1.8	2,300	3	210	75	6.7	610	392	22
		Average		--	26.8	3.6	1.1	2,300*	83*	250	81	7.1*	710	491	12
Oldtown, Md.	287.3	7/14	1120	--	27.2	5.6	1.3	230	230	200	90	7.6	800	517	--
		7/15	0450	--	27.0	5.1	2.3	—	--	220	93	7.3	740	491	16
(Greenspring Bridge)		7/15	1540	--	28.0	7.3	1.5	—	--	250	86	7.7	740	524	10
		7/16	1035	--	26.0	7.1	1.8	23,000	3	250	79	7.7	700	511	—
		Average		--	27.0	6.2	1.7	2,300*	26*	230	87	7.6*	745	510	13
Paw Paw, W. Va.	276.5	7/14	1215	748	27.9	7.5	1.1	43,000	43	150	91	8.0	460	300	—
		7/15	0530	574	26.5	6.5	1.5	—	--	150	97	7.9	495	320	2
(Md. Rt. 51 Bridge)		7/15	1625	574	28.5	7.6	1.5	—	--	150	89	8.1	485	331	--
		7/16	0950	468	26.0	6.3	1.1	2,100	3	160	85	7.6	540	321	4
		Average		597	27.2	6.9	1.3	9,500*	4*	150	90	7.9*	495	318	3
Hancock, Md.	239.1	7/14	1405	1,200	29.2	8.5	1.0	2,300	43	150	91	8.5	445	297	0.4
		7/15	0655	870	28.0	6.8	1.2	--	--	140	92	8.5	400	276	—
(U. S. Rt. 522 Bridge)		7/15	1725	870	29.2	8.8	0.9	—	--	140	86	8.7	430	292	0.0
		7/16	0845	650	25.5	6.5	1.0	2,300	3	140	83	8.3	490	322	—
		Average		907	27.9	7.6	1.0	2,300*	4*	140	88	8.5*	441	296	0.2

* Geometric mean

from the confluence of the North and South Branches near Oldtown, Maryland. The town of Paw Paw, West Virginia, however, discharges about 50,000 gpd of untreated wastes into the Potomac River. A waste stabilization lagoon that is presently under construction will reduce the coliform bacteria count of this discharge.

The Cacapon River flowing north from West Virginia joins the Potomac River about 8 miles upstream from Hancock. The Cacapon River contains water of good quality which further improves the quality of the Potomac River. In the vicinity of Hancock, the chemical composition of water in the Potomac River begins to change from a calcium sulfate to a calcium bicarbonate sulfate type water. Dissolved solids concentrations are about 300 ppm during base flow conditions. The City of Hancock discharges about 150,000 gpd of sewage effluent to Tonoloway Creek after treatment by waste stabilization lagoon. Upstream from the point of sewage discharge, the dissolved solids concentrations are about 85 ppm during base flow.

Most of the water supply for the city of Hagerstown is from the Potomac River, but some is obtained from mountain springs.

Water-quality data at Williamsport indicates the water there to be a calcium bicarbonate type. A dissolved solids concentration of 226 ppm was measured at a discharge of 2,380 cfs. Based on rather limited data, the reach of the Potomac River from just above the confluence with the Cacapon River to Conococheague Creek near Williamsport probably has mean coliform bacteria counts between 100 and 2,000/100 ml.

Ground Water

The Appalachian Region, as used here, includes the area of Maryland from the headwaters of the Potomac River down to Harpers Ferry

or about 40 miles downstream from Conococheague Creek. Ground water from the aquifers of the region is generally suitable for most purposes with little or no treatment. Table 10 shows by formations or aquifers the ranges in concentration and the average values for seven constituents or properties of the ground waters in the region (Slaughter, 1962). Values are shown only for those aquifers having at least five analyses.

Ground water, having iron and manganese in excess of 0.3 ppm, occurs in all the aquifers of the Appalachian Region. However, water from the carbonate rocks is usually low in iron; water from the shales is commonly much higher.

Most water from the Appalachian aquifers contain less than 50 ppm sulfate; a few isolated excessively high readings such as 1,310 ppm, probably indicate that the water has come in contact with gypsiferous beds. Concentrations of chloride are less than 250 ppm in almost all ground waters in the region. In a few isolated places, such as the Cumberland, Maryland, and Ridgeley, West Virginia, areas, analyses indicate values of chloride of several thousand parts per million.

The standards for public water supply, set by the U. S. Public Health Service, indicate that dissolved solids content of water should not exceed 500 ppm for potable water. The dissolved solids concentrations in the ground waters of the Appalachian Region are generally 100-300 ppm but sometimes greater concentrations are indicated. Water from the sandstones is usually lower in dissolved solids than that from limestones.

Ground water from almost all the aquifers of the Appalachian Region would be classified as moderately hard to hard; some is very hard. Water from the sandstones, the quartzites, and the altered volcanics is usually softer than that from other rock types.

Most waters are slightly alkaline, have a higher pH than 7.0 but they seldom are excessively high or low. Waters from the metabasalt and aporhyolite, however, are generally acidic.

Table 10.—Ranges in concentration and average values for selected chemical constituents and properties of ground water in the Appalachian Region[a]

Aquifer	Iron (Fe)		Sulfate (SO_4)		Chloride (Cl)		Nitrate (NO_3)		Dissolved Solids		Hardness ($CaCO_3$)		pH	
	Range	Avg.	Range	Avg.	Range	Avg.	Range	Avg.	Range	Avg.	Range	Avg.	Range	Avg.
Conemaugh	0.02-6.0	1.7	8.8-83	37	2-20	10	0.3-9.8	3.6	118-520	284	80-440	208	6.5-8.3	7.1
Hampshire	.00-.12	.03	.2-7.4	4.8	.6-6	3.8	.1-18	5.8	--	--	13-90	50	6.3-8.7	7.2
Jennings	.00-12(?)	2.5	.4-120	20	2-60	17	.0-11	1.8	113-243	152	58-178	121	6.8-8.3	7.6
Romney Shale	.00-8.2	2.2	4-78	46	1.2-22	6.5	.1-29	4.2	238-295	266	32-227	141	6.1-8.1	7.3
Oriskany Ss.	.00-.96	.30	1-96	22	.7-12	5.5	.1-16	4.2	110-186	135	42-222	132	7.3-8.1	7.6
Tonoloway Ls.	.02-1.4	.34	14-58	25	.8-12	4.4	1.2-13	6.5	74-340	226	54-287	177	7.3-8.1	7.6
Wills Creek Sh.	.00-.07	.05	15-215	133	7.4-58	21	8.9-19	13	--	--	171-460	358	7.0-8.3	7.6
Martinsburg Sh.	.00-1.8	.36	12-51	33	4.3-22	12	9.4-21	15	186-239	212	21-234	142	6.0-8.1	7.2
Rockdale Run	.00-.07	.02	13-36	26	.0-17	8.2	2.6-87	23	304-319	312	102-283	236	7.0-8.2	7.7
Conococheague Ls.	.00-1.8	.02	8.4-60	22	2.4-14	7.2	.1-56	21	201-264	258	148-310	232	7.3-8.1	7.7
Tomstown Dol.	.00-.04	.01	.6-24	10	2-28	8.8	.66-35	17	--	--	87-30.3	198	6.8-8.0	7.6
Harpers Phyllite[b]	.00-.19	.07	.2-15	8.1	.6-7.2	2.9	.1-.8	.4	--	--	5-123	52	6.0-7.7	7.0
Catoctin Metabslt[b]	.00-2.1	.51	.1-51	11	.6-17	6.3	.0-16	5.1	30-182	104	12-112	48	5.2-7.5	6.6

a/ Slaughter (1962), except as noted.
b/ Data from Meyer (1958) also included

Piedmont Province

Surface Water

Conococheague Creek to Potomac River Estuary

The headwaters of Conococheague Creek are in Pennsylvania. Sewage-plant effluent is discharged to the creek after primary or secondary treatment by several municipalities and industries in Pennsylvania. The water in Conococheague Creek near Fairview, Maryland, during 1963-64 was a calcium bicarbonate type with a pH that ranged from 6.9 to 9.6. The hardness of water ranges from moderately hard to very hard depending on the flow conditions. During periods of high flow, the water tends to be less hard. In general, the water reflects the dominant rock types which are shales and limestone. Concentrations of nitrate average about 5 ppm indicating possible organic pollution. Iron concentrations determined by the Geological Survey have not exceeded 1.1 ppm.

Williamsport to Monocacy River--Opequon Creek enters the Potomac from West Virginia in the sub-reach between Williamsport and Shepherdstown. The stream discharge is too small to significantly affect the water quality of the Potomac River despite the inclusion of 5 mgd of sewage effluents discharged after secondary treatment by Winchester, Virginia, and Martinsburg, Virginia.

The waters of Antietam Creek and its tributaries are used by several industries and municipalities in the basin for cooling purposes and sewage disposal. The water is a hard calcium bicarbonate type because of the limestone formations with which it has been in contact. Antietam Creek contains 1.2 mgd secondary sewage effluent from Waynesboro, Pennsylvania, and about 3.8 mgd from Hagerstown, Maryland. Lesser quantities are discharged to Antietam Creek by other facilities and smaller communities.

The confluence of the Potomac and Shenandoah River is at Harpers Ferry. The Shenandoah is an alkaline stream; alkalinities measured at Berryville ranged from 76 to 192 ppm during the 1963 water year. Some waste discharges entering the Shenandoah River from West Virginia affect the quality of water entering the Potomac River.

Brunswick, Maryland discharges sewage effluent to the Potomac River after primary treatment. The Baltimore and Ohio Railroad locomotive maintenance shop at Brunswick obtains its water supply from the Potomac River and discharges the waste cleaning waters after settling and oil removal.

Catoctin Creek receives sewage effluent after secondary treatment from Myersville and Middletown, Maryland. Analysis of Catoctin Creek near Middletown indicates the water to be moderately hard and to have a pH of 6.9.

Taste and odor-producing substances have been reported in the reach of the Potomac River from Conococheague Creek to Monocacy River. Between the Shenandoah and Monocacy Rivers average B.O.D. concentrations exceed 3.0 mg/l and coliform bacteria concentrations are over 5000/100 ml. In the subreach of the Potomac River, Williamsport to Shepherdstown, dissolved-oxygen concentrations occasionally drop below 5.0 mg/l. At Shepherdstown, the quality of the Potomac River is somewhat better than other sampling points in this area.

At Point of Rocks, the Potomac River is a calcium bicarbonate type water most of the time and contains dissolved-solids concentration of 300-400 ppm during base flow. At this location, the water quality reflects the quality of most of the discharge from the upper part of the Potomac River basin and is nearly representative of the quality of water contributed to the estuary. Table 11, a summary of concentration of dissolved

Table 11.--Maximum and minimum dissolved-solids concentrations in the Potomac River basin, monthly averages[a]

Location	Year	Dissolved-solids concentrations in ppm Minimum	Maximum
North Branch Potomac River above Mill at Luke, Md.	1960	53	211
	1961	38	946
	1962	56	227
	1963	49	291
	1964	54	227
North Branch Potomac River below Mill at Luke, Md.	1960	103	349
	1961	80	293
	1962	50	204
	1963	36	340
	1964	39	326
Georges Creek at Westernport, Md.	1960	322	976
	1961	240	1,230
	1962	296	1,190
	1963	191	985
	1964	199	1,070
North Branch Potomac River at McCoole, Md.	1960	104	663
	1961	60	1,000
	1962	48	447
	1963	116	591
	1964	73	731
North Branch Potomac River at Dawson, Md.	1960	98	546
	1961	132	387
	1962	92	480
	1963	97	1,160
	1964	92	620
North Branch Potomac River above Warrior Run near Cresaptown, Md.	1960	181	444
	1961	89	440
	1962	116	444
	1963	107	410
	1964	114	612
North Branch Potomac River near Potomac Park, Md.	1960	137	479
	1961	118	452
	1962	112	453
	1963	97	448
	1964	196	629

Table 11.--Maximum and minimum dissolved-solids concentrations in the Potomac River basin, monthly averages--Continued.

Location	Dissolved-solids concentrations in ppm Year	Minimum	Maximum
North Branch Potomac River at Kelly-Springfield Pumphouse, at Cumberland, Md.	1958	113	432
	1959	126	550
	1960	114	458
	1961	109	534
	1962	108	433
	1963	186	466
	1964	182	630
Wills Creek at Cumberland, Md.	1960	356	407
	1961	77	543
	1962	129	901
	1963	94	448
	1964	170	657
Wills Creek at Narrows Bridge at Cumberland, Md.	1958	158	413
	1959	62	538
	1960	90	499
	1961	89	570
	1962	80	554
	1963	58	518
	1964	113	735
Potomac River above Williamsport, Md.	1960	75	271
	1963	18	318
	1964	16	316
Potomac River below Williamsport, Md.	1960	135	230
	1963	92	380
	1964	60	316

a/ From Interstate Commission on the Potomac River basin

solids from the Potomac River Water Quality Network-Compilation of Data, shows the general range of dissolved constituents contributed to the upper part of the basin.

Monocacy River to Little Falls--The headwaters of the Monocacy River are in Pennsylvania, and after secondary treatment, 750,000 gpd of waste effluents are discharged to the stream in that State. The principal source of water supply of Frederick, Maryland, is from Linganore Creek, but Frederick, Fort Detrick, and several other communities and industries obtain their water supplies from and discharge waste effluent to the Monocacy River. The city of Frederick discharges 3.8 mgd of secondary sewage effluent to the river. The chemical characteristics of the Monocacy River are generally good and a dissolved-solids concentration of 109 ppm has been measured at a discharge of 1,000 cfs (10 per cent above average flow). The water is a calcium bicarbonate type.

Occasionally, the monthly average coliform bacteria count exceeds 2,000 per 100 ml at Great Falls. Some increase in the temperature of the Potomac River at Dickerson is caused by the withdrawal (and subsequent return) of an average of 355 mgd of cooling water by the Potomac Electric Power Company. Extensive biological and chemical surveys of the Potomac River upstream and downstream from the Dickerson Generating Station were made in 1956, 1960 and 1961 by the Academy of Natural Sciences of Philadelphia (Pennsylvania).

Ground Water

All of Montgomery and Carroll counties and that part of Frederick County east of Catoctin Mountain are in the Piedmont province. Ground water from all the aquifers of the Piedmont is usable for various purposes, much of it without treatment. Most of the aquifers contain spotty

occurrences of troublesome amounts of iron. However, in general, iron concentrations are fairly low. It may be necessary, however, to install iron removal or water softening units for some water uses. Table 12 shows the ranges and average concentrations of seven chemical constituents or characteristics of water from seven Piedmont aquifers. Only those aquifers having at least five analyses are included.

The chloride and nitrate values are generally low, except in those wells that have been affected by pollution. In one such well, in the Frederick Limestone, the chloride was reported as 114 ppm and the nitrate as 178. In general, the highest nitrate values are found in carbonate rocks where solution has enlarged the fractures and cracks, and water can readily move through the aquifer.

As the chief mineral constituents that cause hardness are calcium and magnesium, the limestones, marbles, and serpentine yield the hardest water. Generally, the silicate rocks such as the schist, quartzites, and phyllites, yield soft water, although sandstones in the Triassic formations also yield hard water.

The pH of ground waters in the Piedmont ranges from 5.5 to 8.8. The silicate rocks yield water having a pH lower than 7.0; water from the carbonate rocks is generally slightly alkaline, with an average pH of over 7.0.

Table 12.--Ranges in concentration and average values for selected chemical constituents and properties of ground water in the Piedmont Province.

Aquifer	Iron (Fe)		Sulfate (SO_4)		Chloride (Cl)		Nitrate (NO_3)		Dissolved solids		Hardness ($CaCO_3$)		pH	
	Range	Avg.	Range	Avg.	Range	Avg.	Range	Avg.	Range	Avg.	Range	Avg.	Range	Avg.
River Alluvium[a]	0.02-4.8	0.90	-	-	1.5-87	24	0.2-43	14	40-327	197	24-262	106	5.8-7.4	6.5
New Oxford[b,c]	.03-4.9	.76	0.2-56	21	3.2-48	13	3.8-26	15	58-402	190	18-217	118	6.0-8.0	7.1
Frederick Ls.[c]	.01-.66	.16	-	-	.4-10	6.4	6.0-35	21	208-396	304	82-454	221	7.0-8.0	7.7
Marburg Schist[b,c] Ijamsville Phyllite	.03-.95	.22	.2-8.4	4.0	1.4-9.6	5.1			42-283	129	21-88	50	5.5 8.1	6.5
Wissahickan	.0-6.8	.67	.3-45	6.4	2.0-48	9.4	.0-7.2	3.0	28-190	94	2-101	35	5.7 7.3	6.2
Wakefield Marble	.04-.39	.14			4.0-12	7.4	9-20	15	170-270	211	115-225	143	7.4-7.7	7.5
Serpentine[a]	.0-.32	.08	-	-	8.4-18	13	.2-2.0	.6	342-360	350	172-328	246	7.0-8.8	8.0

a/ Johnston (1963)

b/ Dingman and Meyer (1954)

c/ Meyer (1958)

Coastal Plain Province

Surface Water

Potomac River Estuary

According to Durum and Langbein (1966) more than 200 mgd of waste effluent enters the Potomac River estuary. The greatest single discharge of waste effluent to the estuary is by the District of Columbia Blue Plains Sewage Treatment Plant and consequently, the highest coliform concentration and lowest concentrations of dissolved-oxygen are in this reach of the river. Monthly averages of coliform bacteria reported by the Interstate Commission on the Potomac River Basin have occasionally exceeded 1,000,000 mpn (most probable number), and in July, 1965, 8,200,000 mpn per 100 ml was reported near the Blue Plains outfall. The mean coliform counts upstream and downstream from Blue Plains are much lower although from Fort Washington to Hallowing Point, the criterion of 2,000/100 ml is exceeded in most samples collected during most of the year.

Heavy algal growths which give a bright green color to the water are observed throughout the upper estuary during the warmest months of the year. These growths are known to be stimulated by the fertilizing materials contained in waste effluents, primarily nitrogen and phosphorus. During August and September of 1965, when algal growths were particularly heavy, about 15 tons of inorganic nitrogen were added to the estuary each day in waste effluents, in addition to about 3.0 tons per day which entered in the Potomac River inflow. Most of the nitrogen was in the form of ammonia, with a peak concentration of over 3.0 mg/l being observed near the Blue Plains Sewage Treatment Plant outfall. Much of the ammonia was subsequently converted by bacterial oxidation to the nitrate form, which reached a concentration of over 1.0 mg/l about 10 miles below the Blue

Plains outfall. Extremely high phosphorus concentrations were also present, 0.9 mg/l being observed near Fort Washington. From measurements made in 1965, the Chesapeake Bay-Susquehanna River Basins Project (FWPCA) estimated that approximately eight tons per day of phosphorus are discharged to the estuary in waste effluents. These nutrient materials are present in sufficient quantity to support massive algal growths in the estuary. Chlorophyll levels, which are indicative of density, were found in 1965 to have reached a maximum of 180 mg/l in the estuary. This level is higher than previously reported anywhere in the Chesapeake Bay tidal system.

The oxygen content varies with the oxygen demand of the organic load (reported as B.O.D.), with the temperature (more oxygen can be dissolved in cold water than in warm water), and with the river discharge. At low flows (about 1,000 cfs), the dissolved oxygen content (in terms of per cent saturation at a given temperature) is lowest directly below Blue Plains. However, the lowest dissolved oxygen content occurs farther downstream when the river discharges are increased. At a river discharge of about 1,000 cfs, the dissolved oxygen content is less in the Mount Vernon-Hallowing Point reach than at Blue Plains. However, the range in conditions is less and the average dissolved oxygen content at Mt. Vernon is higher than at Blue Plains. During 1964, for example, the monthly average dissolved oxygen content ranged from 3.6 to 13.9 ppm at Mt. Vernon and from 1.9 to 14 ppm below the D. C. sewage treatment plant.

Water in the estuary at Washington is always fresh, and the chloride content increases from less than 30 mg/l at Washington to 5,000 to 10,000 mg/l at the mouth at Chesapeake Bay. In the lower estuary from U. S. Highway 301 to the mouth, the water-quality problems are the natural ones as a result of brackish water and limitations on use are only those normally imposed by salt water conditions.

Ground Water

The area of Maryland that drains directly into the Potomac River estuary is all southeast of the Fall Line and is in the Coastal Plain. Although there is wide range in the concentration of chemical constituents and properties in the ground waters of the Coastal Plain part of the Potomac River basin, most of the water can be used without treatment. In some areas, however, the water is high enough in iron and the pH is low enough to make some treatment necessary.

Table 13 gives by formation and county the range and median values for the five chemical constituents and properties in the ground waters of the Coastal Plain that could be considered the most troublesome. Most other constituents occur in concentrations too low to be a problem.

One constituent that is found in the area in high enough concentrations to be troublesome is iron. The highest values are in Prince George's County in the Patuxent, Patapsco and Raritan, and Magothy Formations; within the county, the highest values are found in the northern part of the county. The concentration of iron varies frequently within one formation: Meyer (1952) reported that the iron in water from the Patuxent Formation at the Agricultural Research Center at Beltsville, Prince George's County ranges from 0.0 to 12 ppm.

Laughlin reported (written communication) that the iron concentration decreases downdip in the Cretaceous and Eocene formations in Charles County. Ferguson (1953) reported that, in general, iron is not found in high enough concentrations in the ground waters of St. Mary's County to constitute a problem.

Chloride in the Coastal Plain ground waters of the Potomac basin is generally very low, as indicated in Table 13. Some values for

Table 13.--Ranges in concentration and median values for selected chemical constituents and properties of ground water in the Coastal Plain (in parts per million, except pH)

Aquifer	County	Iron (Fe)		Chloride (Cl)		Dissolved solids		Hardness ($CaCO_3$)		pH	
		Range	Median	Range	Median	Range	Median	Range	Median	Range	Median
Pleistocene and Pliocene(?)	Prince Georges[a]	0.3-2.0	0.41	2.0-26	7.5	46-256	90	18-146	55	5.1-8.0	6.9
	Charles[b]	.02-2.4	.43	.2-48	7.2	63-403	126	9-403-	46	4.1-7.2	6.3
	St. Marys[c]	.06-2.3	.20	4.5-92	16	47-414	115	23-171	48	6.3-7.6	6.6
Piney Point-Nanjemay	Prince Georges	-	-	-	-	-	-	-	-	-	-
	Charles	-	-	-	-	-	-	-	-	-	-
	St. Marys[c]	.07-1.3	.23	.6-52	3.2	176-439	208	22-132	102	7.8-8.4	8.0
Aquia Greensand	Prince Georges[a]	.01-16	.12	.7-19	2.6	67-309	119	21-234	46	6.1-8.0	7.4
	Charles[b]	.00-3.0	.17	.5-17	2.0	138-259	166	8-150	31	6.9-8.6	7.7
	St. Marys[c]	.00-.65	.16	1.1-9.2	2.8	132-300	206	10-90	14	7.4 8.7	8.5
Magothy	Prince Georges[a]	.02-12.7	.39	.2-12	2.0	62-264	165	10-184	121	4.8-8.4	7.7
	Charles[b]	.10-1.1	.30	1.0-20	3.0	-	-	25-144	104	7.4-8.0	7.6
	St. Marys	-	-	-	-	-	-	-	-	-	-

Table 13.--Ranges in concentration and median values for selected chemical constituents and properties of ground water in the Coastal Plain (in parts per million, except pH)--Continued

Aquifer	County	Iron (Fe)		Chloride (Cl)		Dissolved solids		Hardness ($CaCO_3$)		pH	
		Range	Median	Range	Median	Range	Median	Range	Median	Range	Median
Raritan-Patapsco	Prince Georges[a]	0.0-26	0.71	0.4-8.3	2.2	20-255	150	1-141	14	4.5-8.4	7.4
	Charles[b]	.00-12	.13	.5-160	4.3	122-339	222	1-114	5	6.8-8.6	7.6
	St. Marys	-	-	-	-	-	-	-	-	-	-
Patuxent	Prince Georges[a]	.0-12	.30	.0-332	5.4	20-950	136	3-80	15	4.7-9.9	6.6
	Charles[b]	.00-1.2	.30	1.6-13	4.0	185-220	205	2-22	8	6.4-7.9	7.5
	St. Marys	-	-	-	-	-	-	-	-	-	-

a/ Mack (1966 and Meyer (1952)

b/ Laughlin (in preparation)

c/ Ferguson (1953) and Otton (1955)

shallow dug wells are far below the U. S. Public Health recommended 250 ppm but are higher than the area norm; these may represent local pollution by sanitary wastes.

As the water of the Potomac River ranges from fresh to salty in Southern Maryland, there is always a possibility of salt-water encroachment in the shallow aquifers if they were to be heavily pumped. This could occur where the recharge area of an aquifer directly underlies high-chloride water in the river, or where the aquifer underlies a formation that is either highly permeable or functions as only a leaky seal against the downward movement of high-chloride water. However, Slaughter (written communication) reports that to date (1966), there has been no infiltration of high-chloride water into the aquifers of Charles County. However, he does believe that there is a potential for salt-water encroachment through the upper sands in the Indian Head area. Water from one well near Indian Head is reported to have had a chloride content of 160 ppm, the same as river water at that time. This well is about 75 feet from the river bank (Laughlin, personal communication). The only other value of high chloride (332 ppm) reported occurs in water from a deep well in southern Prince George's County where a test hole penetrated the Patuxent Formation 1,200 feet below sea level (Mack, 1966). The relatively high chloride in this case may be due to the water moving very slowly over a long distance and thus having an opportunity to dissolve more mineral matter from long contact with the rocks.

As will be noted in Table 13, the median values of dissolved-solid content for all formations in the Coastal Plain are below 225 ppm and for some formations below 175 ppm. In general, the higher dissolved-solids content occurs in deeper waters that are some distance downdip

from the recharge areas of the strata and thus have been in contact with the rocks for a longer time.

The median values for hardness of ground water in the Coastal Plain (5 to 121 ppm) indicate that most of the water can be classified as soft. Some water, notably that from the Aquia Greensand in southern Charles County and in St. Mary's County, has undergone a natural softening by base exchange. Such water is relatively high in sodium and potassium and low in calcium and magnesium. This exchange takes place in the presence of the mineral glauconite, a major constituent of the Aquia Greensand.

The ground water may be hard in formations that contain calcareous shells. In some cases, hard water is found in formations that do not themselves contain shell fragments, but may underlie those that do; this is thought to account for the hard water in the Magothy Formation in Prince George's County (Mack, 1966). The maximum values for hardness in some samples from all the formations, except the Patuxent, are high enough to classify those waters as hard or very hard.

Much of the acidic water that is found in the Coastal Plain part of the Potomac basin occurs in the Cretaceous formations in northern Prince George's County and in the Pleistocene and Pliocene deposits in all three counties. Water from the Aquia Greensand and the Piney Point Formation is conspicuous for the high values for pH, especially in St. Mary's County, where even the median values are 8.5 and 8.0 (Table 13).

Water Resources Development in the Potomac River Basin

The Potomac River basin is truly interstate in nature. Of the 14,670 square miles within the total basin, 5,723 are in Virginia; 3,818 in Maryland; 3,490 in West Virginia; 1,570 in Pennsylvania; and 69 in the District of Columbia.

Annual streamflow averages 8,860 mgd for the entire basin. Of this annual average, about 2,300 mgd is contributed from the Maryland portion of the basin. This compares with an estimated annual use by Maryland of 310 billion gallons or an annual average of 850 mgd.

Based on the prevailing supply and projected demand data, it is quite apparent that in order for Maryland to provide for future water requirements, the State will increasingly depend on interstate and federal cooperation in water resources development.

Study activity relative to the water resources of the Potomac River basin has a long history. In April, 1932, the Corps of Engineers reported on navigation, flood control, water power, and irrigation in the basin. No improvements or development were recommended with the exception of flood control in Washington, D. C. The 1932 study was followed in June, 1937, by a preliminary examination recommending that a survey of the Potomac River for flood control needs be undertaken.

The 1937 recommendation led to the issuance, by the Corps of Engineers, of a 79th Congress report dealing extensively with flood control and hydro-electric power generation potential in the Potomac basin. Emergency considerations brought on by World War II were in large measure responsible for the attention given to hydropower. Because population growth was viewed as relatively static (a predicted peak of 165 million

persons in the United States by 1990), no water supply problems were envisioned. Pollution abatement was still viewed as a distinctly local matter. However, with the end of World War II, emphasis on the need for power diminished and the report lost public support.

In January 1956, the Corps of Engineers was authorized to review the 79th Congress report and prepare a comprehensive plan for the control of floods and the development and conservation of the basin's water and related resources. A subsequent Congressional directive in 1959 specified that flood control, recreation, and the development and conservation of municipal and industrial water supply and pollution abatement be included in the comprehensive plan. These study directives culminated in the Corps of Engineers, February 1963, "Potomac River Basin Report."

The Maryland State Planning Department, in 1964, reviewed the Corps' report and recommended that the State of Maryland support the construction of several of the recommended Corps' storage reservoir projects and all the headwater reservoirs in the Maryland part of the Potomac basin recommended by the United States Department of Agriculture Soil Conservation Service. Of the recommended major reservoirs, several are now being considered for construction. These include Bloomington, Sixes Bridge, Town Creek, and Savage II.

On February 8, 1965, President Lyndon B. Johnson directed "the Secretary of the Interior to review the Potomac River Basin development plan now under review by the Chief of Army Engineers, and to work with the affected states and local governments, the District of Columbia, and interested Federal agencies to prepare a program for my consideration." Such a program would be designed to "clean up the river," "protect its natural beauty," and "provide adequate recreational facilities." To meet this obligation, the Federal Interdepartmental Task Force on the Potomac Basin was established. The Task Force consisted of four working groups--Landscape and Recreation, Soil Erosion and Sedimentation, Water Quality and Pollution Abatement, and Water Supply and Flood Control.

Intergovernmental Institutional Arrangements

During the past 25 years, several intergovernmental institutional arrangements have been created to oversee water resource development and planning in all or parts of the Potomac River basin. Institutional involvements, to which Maryland is a party, are summarized below:

Interstate Commission on the Potomac River Basin*

In 1939, Congress authorized Maryland, Pennsylvania, Virginia, West Virginia, and the District of Columbia to enter into a compact for the purpose of regulating, controlling, and preventing the pollution of the waters of the Potomac drainage area by sewage, industrial, and other wastes.

Major powers of the Commission are as follows:

a. collecting data, conducting research, and preparing reports on the character, pollution, and condition of streams in the basin;

b. cooperating with the legislative and administrative agencies of the signatory parties, commissions and other organizations for the purpose of promoting uniform laws, rules, and regulations for the abatement and control of pollution;

c. disseminating to the public information in relation to stream pollution problems;

d. cooperating with other organizations engaged in fact-finding and research activities on the treatment of sewage and industrial wastes; and

* Maryland has ratified suggested amendments to the Compact indicated by the legal citation, but Virginia has not and, therefore, the amendments have not become effective. The major powers of the Commission outlined in this document are those ratified by all signatory parties.

e. making, revising, and recommending to the states reasonable minimum standards for the treatment of sewage and industrial wastes discharged, or to be discharged, into the streams of the basin.

Potomac River Fisheries Commission

In 1958, the States of Maryland and Virginia entered into an agreement to protect the Potomac River fisheries resource common to both parties. Principal responsibilities of the Commission involve regulating various aspects of the catch of fish and shellfish in the Potomac system.

Potomac River Basin Advisory Committee

The Potomac River Basin Advisory Committee was established in 1965 to coordinate the interest of the several basin jurisdictions on all significant matters pertaining to the water and related land resources of the Potomac basin, to bring to the attention of responsible Federal agencies the general concern and interest of the states and the District of Columbia in these matters, and to advise the heads of government on the best possible kind of permanent interstate organization for the planning and development of the resources of the basin.

The Advisory Committee consists of three representatives each from Maryland, Pennsylvania, Virginia, West Virginia, and the District of Columbia, appointed by the respective Governors and by the President of the Board of Commissioners of the District of Columbia.

The Chairman of the Advisory Committee may, upon the recommendation of the states' representatives, appoint members to any such subcommittees as the parent committee may create. Consulting members may include State, local, Federal and/or interstate officials and representatives of

civic or other organizations concerned with the development of the basin, as well as other individuals having special knowledge or competence in matters of concern to the committee.

The duties of the committee are as follows:

a. assisting in the formulation and implementation of plans for the development, management, and use of the water and related resources of the Potomac River basin;

b. seeking and coordinating the views of the several basin jurisdictions, political subdivisions, industries, organizations, and the general public on all significant matters pertaining to the Potomac River;

c. considering these views with representatives of the Departments of the Interior and the Army and with such other Federal and state agencies and officials as the Committee may deem appropriate;

d. serving as the parent representative body of the Potomac basin states in dealing with the Federal Interdepartmental Task Force on the Potomac River Basin;

e. informing the Governors and the Board of Commissioners of the results of the Committee's activities under "b" and "c" above, together with the recommendations of the Committee in relation thereto; and

f. determining and advising the respective Governors and the Board of Commissioners concerning the best possible kind of permanent interstate organization for the planning, development, and administration of the waters and related land resources of the Potomac River basin.

Federal Interdepartmental Task Force on the Potomac River Basin

The Federal Interdepartmental Task Force on the Potomac was created by the Secretary of the Interior in response to the President's request of February, 1965, to make the Potomac "a model of conservation." Cooperating with the Federal Task Force has been the Potomac River Basin Advisory Committee--the state counterpart to the Task Force.

To expedite the carrying out of the President's directive, four Sub-Task Force study groups were created. Both Federal and state agency personnel served; however, the state personnel as observers only--on these study committees. The four Sub-Task Force groups are:

1. Water Quality Sub-Task Force
2. Water Supply and Flood Control Sub-Task Force
3. Sedimentation and Erosion Control Sub-Task Force
4. Recreation Sub-Task Force.

Recommendations of the Federal Interdepartmental Task Force have not been formally acted upon up to May, 1967. The water quality, water supply, and sedimentation control findings are briefly summarized on pages 61 - 63. And, the concept of a Potomac Valley recreation area complex was one recommendation of the Recreation Sub-Task Force.

Water Development Coordinating Committee for Appalachia

The Water Development Coordinating Committee for Appalachia was established by the Corps of Engineers in conjunction with the development of a plan for the Appalachian Region. This committee will serve to coordinate the studies of the Corps of Engineers and other Federal agencies and the activities of the twelve states in the Appalachian Region. The Departments of Water Resources and State Planning represent the State of Maryland on this coordinating committee.

The Corps of Engineers' "Plan of Survey for Development of Water Resources of Appalachia" identifies the following objectives:

a. developing a comprehensive plan for efficient utilization of Appalachia's water and related land resources;

b. considering the plan in conjunction with the overall economic development program for the region and nation;

c. improving awareness of the economic effects of water resources development;

d. recommending needed programs and projects; and

e. providing for continuity of planning after 1968.

In Maryland, the Appalachian Region is comprised of three counties (Allegany, Garrett and Washington counties) totaling 1,550 square miles. Of this area, 1,136 square miles or 73 per cent of the area is in the Potomac River basin.

North Atlantic Water Resources Study Coordinating Committee

The Water Resources Council delineated the North Atlantic Region as one of 18 throughout the United States for a comprehensive framework study in response to the 1961 report of the Senate Select Committee on National Water Resources. Congress further authorized and directed the Secretary of the Army to have the Corps of Engineers prepare a framework plan for the North Atlantic Region. This study was begun in 1966.

The geographical area to be encompassed by the North Atlantic Region study includes all river basins draining into the Atlantic Ocean at points north of the Virginia-North Carolina line, portions of the Lake Champlain drainage within the United States, and the St. Lawrence River drainage below the junction of the St. Lawrence River, and the International boundary. The states of Maine, New Hampshire, Vermont,

Connecticut, Massachusetts, Rhode Island, New Jersey, Delaware and the District of Columbia and parts of the states of New York, Pennsylvania, Maryland, West Virginia, and Virginia are included within the study area boundaries. There are 45 million people living in the area, or about one out of every four citizens of our nation. All the Potomac River drainage basin is included within the defined North Atlantic Region.

The Coordinating Committee is composed of representatives from the above states, as well as concerned Federal agencies. The State Planning Department through its Director and staff serves as the State's representative on this Committee. The Coordinating Committee is serviced by the Corps of Engineers.

There are presently several water and related land resources and economic studies underway within the region.

The report will focus on three main questions: present and long-range water and related land resources needs in the North Atlantic Region; the potentials for meeting these needs; and procedures to be followed in meeting the identified needs.

The report will present conclusions drawn in part from the following types of basic data:

a. future population levels and rates of growth;

b. present and future social and economic characteristics of the area;

c. population and industrial concentration, urbanization and agricultural development;

d. methods of water resource development;

e. developable water resources; and

f. schedule of needed water resource development.

Recommendations will be of the following nature:

a. adoption of a framework plan for water resource development;

b. federal and state responsibilities in implementation of the framework plan;

c. timing, costs, and funding levels of detailed federal and state studies for specific projects to meet present and near-future needs of organization for such detailed studies; and

d. provision for continuous federal and state coordination and updating of the framework plan.

The North Atlantic Region study is scheduled to be completed in five years and will require the investment of approximately $4 million of federal funds.

Northeastern United States Water Supply Study

The Northeastern United States Water Supply (NEWS) study was authorized by the Congress in 1965 in response to drought conditions in the northeast.

Congress authorized the Corps of Engineers to undertake planning to meet the long-range water needs of this section of the country. The plan will recommend necessary reservoir storage, major water conveyance facilities required for interbasin water transfer, and major waste purification facilities needed to meet the water supply demands of the metropolitan northeast complex.

The study recommendations will have to be an acceptable part of a comprehensive plan for the river basin in which the particular facility is located. A public hearing held prior to initiating the planning work was conducted in Baltimore during April, 1967.

The area comprised by the NEWS Study is identical to that of the North Atlantic Water Resources Study which includes all the Potomac River basin.

Recent Findings on Water Resources of the Potomac River Basin

During the past two years, several sub-task force work groups of the parent Federal Interdepartmental Task Force on the Potomac River Basin have been engaged in studying water supply, water quality, erosion, flooding, and recreation problems in the basin.* The findings summarized below are still subject to final acceptance by the parent Interdepartmental Task Force.

The findings of the sub-task work groups point out that flow regulation storage requirements for water quality will be similar to those called for in the 1963 Corps of Engineers' report with the exception of the Potomac estuary. This assumes adequate treatment to achieve 80 and 85 per cent removal of the five-day B.O.D. in the discharges to the river by the year 1985 and 2010, respectively, and 85 and 90 per cent, respectively, in the Washington metropolitan area.

At periods of low inflow and runoff and with advanced waste water treatment, dilution by flow regulations releases from upstream storage and dispersing of highly treated wastes in the lower part of the upper estuary, the upper estuary would probably be suitable as an emergency water supply. Such a use would require a minimum inflow from upstream of between 600 and 1,000 cfs at all times. This newly calculated estuary inflow requirement contrasts with the 2,200-3,600 cfs recommended in the 1963 Corps' report for 1985 for quality control alone.

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* Interdepartmental Task Force on the Potomac, Sub-Task Force on Water Quality - Final Report (February, 1967).

Interdepartmental Task Force on the Potomac, Sub-Task Force on Water Supply and Flood Control - Third Interim Report (January, 1967).

The most critical water supply requirements will occur in the Washington Metropolitan and Frederick, Maryland, areas. The Washington Metropolitan area's municipal and industrial water supply requirements are expected to increase from approximately 405 mgd at the present to 1,140 mgd in the year 2010. At this level of demand, the one day-30 year dependable flow above Great Falls will be exceeded in 1970. If quality control in the Potomac estuary is also taken into consideration, an additional minimum inflow, recorded above Great Falls, of 360 mgd will be required.

The Frederick area's municipal and industrial water supply requirements are expected to "increase from approximately 11 mgd at the present to 22 mgd in 1985 and 33 mgd in the year 2000."* At this level of demand, the one day-30 year dependable flow will be exceeded in 1975.

Several water storage projects have been recommended for satisfying Metropolitan Washington's water supply requirements beyond 1970. These include the Bloomington Project on the North Branch which is authorized for construction, Town Creek and Sideling Hill Creek in Maryland and Little Cacapon River in West Virginia.

In addition, under the Appalachian Regional Development program, the Savage II reservoir on the Savage River--a tributary to the North Branch of the Potomac--is being considered for construction.

The final report of the Sub-Task Force on Sedimentation and Erosion will describe erosion and sedimentation in the basin, weigh the relative significance of the various sources, and propose a 10-year program for dealing with the overall problem.

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* Based on estimates made by the Maryland Department of Water Resources.

Although the Sub-Task Force recognizes that a basin-wide program is the most effective means of controlling the erosion and sediment problem, their report identifies accelerated erosion resulting from urban development, highway construction, and strip mining as distinctive and concentrated sources of sediment which justify early corrective attention. As a result, nearly one-third of the recommended program deals with proposed support measures for controlling these more acute erosion and sedimentation problems.

The Sub-Task Force's recommendation includes 19 measures to accelerate sediment and erosion control in the basin, without reference to priorities. It is the opinion of the Sub-Task Force that the successful completion of the program it proposes will reduce the sediment contribution to the Potomac Estuary by about 48 per cent at an estimated cost of $250,233,000 with the Federal government providing $201,384,000. These costs are for the acceleration of sediment and erosion control measures, and are in addition to present program levels.

SUMMARY

The Potomac River is the second largest river in Maryland, ranking after the Susquehanna River in total drainage area and discharge. The Potomac River drainage area in Maryland (3,818 square miles) is the largest of any basin in the State.

The average annual precipitation over the Maryland part of the Potomac River basin ranges from 36 to 52 inches and averages about 40 inches. About 60 per cent of the precipitation may be estimated as lost by evapotranspiration. The remainder of about 17 inches or less is the runoff in streams and rivers. The drainage area above the gaging station at Washington, D. C. is 11,560 square miles of which about 2,400 square miles is in Maryland, and the average discharge past the gaging station is slightly above 11,000 cfs or about 13 inches per year. However, the median discharge (that which is equaled or exceeded for 50 per cent of the time) is only about 6,500 cfs.

The largest reservoir in Maryland in the Potomac River basin at this time (1966) is on the Savage River with a storage capacity of about 20,000 acre feet. Smaller reservoirs on the Stony River in West Virginia and Evitts Creek in Pennsylvania are important for water supply and flow regulation in Maryland.

The occurrence and availability of ground water from aquifers in the Potomac River basin are quite variable. West of the Fall Line as much as 300,000 gpd per square mile of ground water could be developed by an optimum distribution of low producing wells. East of the Fall Line more than 500,000 gpd per square mile could be developed by properly constructed and located wells.

Within each of the five geographic regions of the basin, there are one or more aquifers that are capable of yielding 100 gpm of water to properly constructed wells. However, west of the Fall Line most of the area is underlain by aquifers that generally produce less than 50 gpm.

About 2.5 million people use the Potomac River as a source of water supply. Another 500,000 people in the Maryland part of the Potomac River basin use ground water obtained from wells and springs for municipal and industrial use. More than half the water used is by the population served in the District of Columbia and adjacent areas. The approximately 550 million gallons per day of municipal use is equivalent to a river discharge of about 850 cfs or one-eighth of the median discharge of the Potomac River at Washington, D. C. A very small percentage of the water used is consumed and most water used upstream is returned eventually to the river or estuary downstream. Water supply conditions can become critical, however, during drought conditions such as September 9, 1966, when 317 million gallons were diverted in the Washington area from a total flow of 389 million gallons.

The ground-water use in the Potomac River basin in Maryland has been estimated to be about 29 mgd. As the Potomac River basin is in five physiographic provinces and covers an area with a wide diversity of geologic conditions, the reliable yield of ground water available to wells ranges from almost zero to many hundreds of gallons per minute.

The quality of water in the Potomac River and tributaries is generally good but also varies according to flow conditions and the area considered. The headwaters and North Branch are acid due to acid mine drainage. After flowing through the limestone areas of the Appalachian Region, the waters are usually hard. Pollution from waste-water discharges is a problem in the Potomac River basin and particularly in the estuary.

Downstream from Washington, the estuary is brackish and saline water is diffused through the estuary by tidal action. It is estimated that annually about 2.5 million tons of sediments are discharged into the Potomac River estuary. The average annual sediment discharge for long periods of time may properly be attributed chiefly to land use within the basin.

The ground water of the Potomac basin is good, but in the Piedmont province and Appalachian Region it is often hard. In the Coastal Plain province, the water is usually soft. The most common problem of quality of ground water in Maryland is the need to treat it because of high iron concentrations.

In order for Maryland to provide for future water requirements, the State will increasingly depend on interstate and Federal cooperation in water resources development. During the past 25 years, at least seven intergovernmental institutional arrangements have been created to oversee water resources development and planning in all parts of the Potomac River basin.

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APPENDIX A

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

See Description of Appendices (Appendix A) in the General Reference Section for a narrative discussion of this material.

Appendix A

POTOMAC RIVER	DRAINAGE BASIN
North Branch	SUB-BASIN

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
POTOMAC RIVER	285.1/Mouth of North Branch
North Branch	____/Head of North Branch, Tucker Co., West Virginia
North Branch	____/County Line, Upstream - Tucker Co. Downstream - Preston Co., W. Va.
North Branch	____/Bridge, Secondary road near Kempton, Md.
North Branch	96.1/State and County Line, Upstream - Preston Co., W. Va.; Downstream - Grant Co., W. Va. & Garrett Co., Md.
North Branch*	93.0/Bridge, Western Md. R.R. near Kempton Junction
North Branch	91.9/Bridge, Unimproved road at Henry, W. Va.
North Branch	90.2/Bridge, Secondary road at Dobbin, W. Va.
North Branch	89.9/Mouth of Laurel Run, Md.
Laurel Run	____/Head of Laurel Run, Preston Co., West Virginia
Laurel Run	____/State Line, Upstream - W. Va., Downstream - Md.
Laurel Run	2.5/Mouth of Chestnut Ridge Run
Chestnut Ridge Run	1.7/Head of Chestnut Ridge Run, Md.
Chestnut Ridge Run	0.2/Mouth of Red Oak Run
Red Oak Run	1.2/Head of Red Oak Run, Md.
Red Oak Run	0.0/Mouth of Red Oak Run
Chestnut Ridge Run	0.2/Mouth of Red Oak Run
Chestnut Ridge Run	0.0/Mouth of Chestnut Ridge Run
Laurel Run	2.5/Mouth of Chestnut Ridge Run
Laurel Run	0.0/Mouth of Laurel Run
North Branch	89.9/Mouth of Laurel Run
North Branch	89.1/Mouth of Red Oak Creek
Red Oak Creek	/Head of Red Oak Creek, W. Va.
Red Oak Creek	0.0/Mouth of Red Oak Creek
North Branch	89.1/Mouth of Red Oak Creek
North Branch	89.1/Bridge, Secondary road at Wilson, Md.
North Branch	89.0/Mouth of Sand Run, Md.
Sand Run	0.9/Head of Sand Run, near Wilson, Md.
Sand Run	0.9/Mouth of South Fork
South Fork	2.3/Head of South Fork
South Fork	0.0/Mouth of South Fork
Sand Run	0.9/Mouth of South Fork
Sand Run	0.9/Mouth of North Fork
North Fork	2.2/Head of North Fork
North Fork	0.0/Mouth of North Fork
Sand Run	0.9/Mouth of North Fork
Sand Run	0.0/Mouth of Sand Run
North Branch	89.0/Mouth of Sand Run, Md.
North Branch	____/Intake and Outfall, Davis Coal Company

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
North Branch	87.1/Mouth of Shields Run
Shields Run	2.8/Head of Shields Run near Table Rock
Shields Run	1.3/Mouth of Aronhalt Fork
Aronhalt Fork	____/Head of Aronhalt Fork
Aronhalt Fork	0.0/Mouth of Aronhalt Fork
Shields Run	1.3/Mouth of Aronhalt Fork
Shields Run	0.9/Mouth of McMillan Fork
McMillan Fork	2.6/Head of McMillan Fork
McMillan Fork	0.0/Mouth of McMillan Fork
Shields Run	0.9/Mouth of McMillan Fork
Shields Run	0.0/Mouth of Shields Run
North Branch	87.1/Mouth of Shields Run
North Branch	86.7/Bridge, Secondary road at Bayard, W. Va.
North Branch	86.4/Mouth of Buffalo Creek
Buffalo Creek	____/Head of Buffalo Creek in W. Va.
Buffalo Creek	____/Intake,& Outfall, Fairfax Coal Company, Bayard, W. Va.
Buffalo Creek	0.0/Mouth of Buffalo Creek
North Branch	86.4/Mouth of Buffalo Creek
North Branch	86.34/Bridge, Western Md. R.R. at Bayard
North Branch	____/Outfall, Bayard, W. Va.
North Branch	84.23/Bridge, U. S. Highway #50 at Gorman, Md. and Gormania, W. Va.
North Branch	84.15/Mouth of Nydegger Run, Md.
Nydegger Run	____/Head of Nydegger Run, Garrett Co.
Nydegger Run	0.0/Mouth of Nydegger Run
North Branch	84.15/Mouth of Nydegger Run
North Branch	83.0/Mouth of Glade Run, Md.
Glade Run	____/Head of Glade Run in Garrett Co.
Glade Run	2.5/Bridge, Highway Md. #560
Glade Run	0.0/Mouth of Glade Run
North Branch	83.0/Mouth of Glade Run, Md.
North Branch	82.2/Mouth of Steyer Run, Md.
Steyer Run	____/Head of Steyer Run, Garrett Co.
Steyer Run	0.0/Mouth of Steyer Run
North Branch	82.2/Mouth of Steyer Run, Md.
North Branch	82.0/Town of Steyer, Md.
North Branch	81.75/Gaging Station at Steyer (D. A. 73.0)
North Branch	81.0/Mouth of Difficult Creek, W. Va.
Difficult Creek	____/Head of Difficult Creek in Grant Co.
Difficult Creek	0.0/Mouth of Difficult Creek
North Branch	81.0/Mouth of Difficult Creek
North Branch	80.4/Upstream boundary of Potomac State Forest, Garrett Co., Maryland
North Branch	79.9/Town of Wallman, Md.
North Branch	78.3/Mouth of Stony River
Stony River	____/Head of Stony River, W. Va.

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Stony River	____/Dam Site, proposed Mount Storm Reservoir near U. S. Highway #50 Bridge, in West Virginia
Stony River	____/Bridge, U. S. Highway #50 in Grant County, W. Va.
Stony River	0.0/Mouth of Stony River (D. A. 59.2)
North Branch	78.3/Mouth of Stony Run
North Branch	78.3/County Line, Upstream - Grant Co. W. Va. & Garrett Co. Md., Downstream - Mineral Co. W. Va. & Garrett Co. Md.
North Branch**	77.7/Bridge, Western Md. R.R.
North Branch	76.3/Town of Schell, W. Va.
North Branch	76.28/Bridge, Unimproved road at Schell
North Branch	76.25/Mouth of Laurel Run
Laurel Run	____/Head of Laurel Run, Garrett Co.
Laurel Run	2.4/Upstream boundary of Potomac State Forest
Laurel Run	2.3/Mouth of Trout Run
Trout Run	____/Head of Trout Run near Kelso Gap, Garrett Co., Md.
Trout Run	0.4/Upstream boundary of Potomac State Forest
Trout Run	0.2/Mouth of Rileys Spring Branch
Rileys Spring Branch	1.4/Head of Rileys Spring Branch near Kearney, Md.
Rileys Spring Branch	0.5/Upstream boundary of Potomac State Forest
Rileys Spring Branch	0.0/Mouth of Rileys Spring Br.
Trout Run	0.2/Mouth of Rileys Spring Branch
Trout Run	0.0/Mouth of Trout Run
Laurel Run	2.3/Mouth of Trout Run
Laurel Run	0.0/Mouth of Laurel Run
North Branch	76.25/Mouth of Laurel Run
North Branch	75.5/Mouth of Crooked Run
Crooked Run	2.0/Head of Crooked Run, Garrett Co.
Crooked Run	0.8/Upstream boundary of Potomac State Forest
Crooked Run	0.0/Mouth of Crooked Run
North Branch	75.5/Mouth of Crooked Run
North Branch	74.4/Mouth of Maple Run
Maple Run	____/Head of Maple Run
Maple Run	0.0/Mouth of Maple Run
North Branch	74.4/Mouth of Maple Run
North Branch	74.3/Town of Hubbard, W. Va.
North Branch	73.9/Mouth of Lostland Run, Md.
Lostland Run	1.8/Head of Lostland Run, Potomac State Forest, Garrett Co., Md.
Lostland Run	1.8/Mouth of North Prong
North Prong	____/Head of North Prong
North Prong	0.0/Mouth of North Prong

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Lostland Run	1.8/Mouth of North Prong
Lostland Run	1.8/Mouth of South Prong
South Prong	____/Head of South Prong
South Prong	0.0/Mouth of South Prong
Lostland Run	1.8/Mouth of South Prong
Lostland Run	1.5/Upstream limit of boundary of Potomac State Forest coincident with Lostland Run
Lostland Run	0.9/Downstream limit of boundary of Potomac State Forest coincident with Lostland Run
Lostland Run	0.0/Mouth of Lostland Run
North Branch	73.9/Mouth of Lostland Run
North Branch	73.5/Lostland Run Dam Site
North Branch	73.5/Downstream boundary of Potomac State Forest
North Branch	72.8/Town of Gleason, W. Va.
North Branch	72.0/Bridge, Western Md. R.R.
North Branch	71.7/Mouth of Short Run
Short Run	____/Head of Short Run
Short Run	0.0/Mouth of Short Run
North Branch	71.7/Mouth of Short Run
North Branch	71.3/Town of Harrison, W. Va.
North Branch	71.28/Mouth of Abram Creek
Abram Creek	____/Head of Abram Creek
Abram Creek	____/County Line, Upstream - Mineral Co., Downstream - Grant Co., W. Va.
Abram Creek	____/Bridge, U. S. Highway #50 and W. Va. #42 in Grant Co., W. Va.
Abram Creek	____/County Line, Upstream - Grant Co. Downstream - Mineral Co. W. Va.
Abram Creek	0.8/Bridge, Secondary road at The Eddy
Abram Creek	0.0/Mouth of Abram Creek
North Branch	71.28/Mouth of Abram Creek
North Branch	71.2/Town of Shallmar, Maryland
North Branch	70.4/Mouth of Wolfden Run
Wolfden Run	____/Head of Wolfden Run
Wolfden Run	0.4/Bridge, Secondary road near Kitzmiller
Wolfden Run	0.02/Bridge, Secondary road near Kitzmiller
Wolfden Run	____/Intake, Shallmar, Md.
Wolfden Run	0.0/Mouth of Wolfden Run
North Branch	70.4/Mouth of Wolfden Run
North Branch	69.53/Staff gage near Kitzmiller, Md.
North Branch	69.52/Bridge, W. Va. #42 at Kitzmiller
North Branch	69.5/Town of Kitzmiller, Md.
North Branch	68.9/Outfall, Kitzmiller, Md.
North Branch	68.9/Gaging Station, Kitzmiller, Md. (D. A. 225.0)

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
North Branch	66.04/Bridge, Western Maryland R.R.
North Branch	66.0/Chaffee, W. Va.
North Branch	65.7/Mouth of Three Forks Run
Three Forks Run	4.5/Head of Three Forks Run near Swanton
Three Forks Run	2.2/Mouth of Right Prong
Right Prong	1.9/Head of Right Prong
Right Prong	0.0/Mouth of Right Prong
Three Forks Run	2.2/Mouth of Right Prong
Three Forks Run	2.0/Intake, Vindex, Md.
Three Forks Run	1.7/Mouth of Left Prong
Left Prong	____/Head of Left Prong
Left Prong	1.8/Bridge, secondary road at West Vindex
Left Prong	0.0/Mouth of Left Prong
Three Forks Run	1.7/Mouth of Left Prong
Three Forks Run	1.4/Mouth of Jennings Run
Jennings Run	2.4/Head of Jennings Run
Jennings Run	0.0/Mouth of Jennings Run
Three Forks Run	1.4/Mouth of Jennings Run
Three Forks Run	0.0/Mouth of Three Forks Run
North Branch	65.7/Mouth of Three Forks Run
North Branch	64.4/Mouth of Stony Hollow Run
Stony Hollow Run	____/Head of Stony Hollow Run
Stony Hollow Run	0.0/Mouth of Stony Hollow Run
North Branch	64.4/Mouth of Stony Hollow Run
North Branch	63.6/Mouth of Deep Run
Deep Run	____/Head of Deep Run near Sulphur City, Mineral County, W. Va.
Deep Run	0.1/Bridge, Secondary road at Shaw, W.Va.
Deep Run	0.0/Mouth of Deep Run
North Branch	63.6/Mouth of Deep Run
North Branch	63.5/Shaw, W. Va.
North Branch	63.4/Mouth of Howell Run
Howell Run	____/Head of Howell Run
Howell Run	0.1/Bridge, W. Va. Highway #46 at Shaw
Howell Run	0.0/Mouth of Howell Run
North Branch	63.4/Mouth of Howell Run
North Branch	61.8/Mouth of Elklick Run
Elklick Run	____/Head of Elklick Run
Elklick Run	0.0/Mouth of Elklick Run
North Branch	61.8/Mouth of Elklick Run
North Branch	60.35/Barnum Dam Site
North Branch	59.4/Barnum, W. Va.
North Branch	59.2/Mouth of Folly Run, Md.
Folly Run	____/Head of Folly Run, Md.
Folly Run	0.0/Mouth of Folly Run
North Branch	59.2/Mouth of Folly Run, Md.

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
North Branch	56.2/Mouth of Laurel Run
Laurel Run	____/Head of Laurel Run
Laurel Run	0.0/Mouth of Laurel Run (D. A. 9.1)
North Branch	56.2/Mouth of Laurel Run
North Branch	54.8/Mouth of Piney Swamp Run
Piney Swamp Run	____/Head of Piney Swamp Run
Piney Swamp Run	0.0/Mouth of Piney Swamp Run
North Branch	54.8/Mouth of Piney Swamp Run
North Branch	54.0/Dam Site, proposed Bloomington Reservoir, near Bloomington, Md.
North Branch	53.8/Bridge, B & O R.R.
North Branch	53.6/Bridge, Secondary road at Bloomington
North Branch	53.58/Gaging Station at Bloomington, Md.
North Branch	53.5/Mouth of Savage River
Savage River	____/Head of Savage River
Savage River	____/Intake, Frostburg, Md.
Savage River	____/Bridge, U. S. Highway #40
Savage River	____/Mouth of Carey Run
Carey Run	____/Head of Carey Run
Carey Run	0.0/Mouth of Carey Run
Savage River	____/Mouth of Carey Run
Savage River	____/Upstream limit of boundary of Savage River State Forest coincident with Savage River
Savage River	21.4/Mouth of Mudlick Run
Mudlick Run	____/Head of Mudlick Run
Mudlick Run	2.0/Upstream boundary of Savage River State Forest
Mudlick Run	1.2/Mouth of Christley Run
Christley Run	2.2/Head of Christley Run
Christley Run	0.03/Upstream boundary of Savage River State Forest
Christley Run	0.0/Mouth of Christley Run
Mudlick Run	1.2/Mouth of Christley Run
Mudlick Run	0.0/Mouth of Mudlick Run
Savage River	21.4/Mouth of Mudlick Run
Savage River	21.3/Dowsntream limit of boundary of Savage River State Forest
Savage River	19.8/Bridge, Secondary road
Savage River	16.8/Upstream limit of boundary of Savage River State Forest
Savage River	15.0/Mouth of Little Savage River
Little Savage River	6.2/Head of Little Savage River
Little Savage River	5.9/Upstream limit of Callahan Swamp
Little Savage River	5.1/Downstream limit of Callahan Swamp
Little Savage River	3.0/Bridge, Secondary road near Big Savage Mountain

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Little Savage River	2.9/Boundary of Savage River State Forest
Little Savage River	0.6/Mouth of Swamp Run
Swamp Run	1.5/Head of Swamp Run
Swamp Run	0.0/Mouth of Swamp Run
Little Savage River	0.6/Mouth of Swamp Run
Little Savage River	0.0/Mouth of Little Savage River
Savage River	15.0/Mouth of Little Savage River
Savage River	13.6/Mouth of Bluelick Run
Bluelick Run	____/Head of Bluelick Run
Bluelick Run	____/Upstream boundary of Savage River State Forest
Bluelick Run	____/Bridge, Secondary road in Savage River Forest
Bluelick Run	1.9/Mouth of West Branch
West Branch	____/Head of West Branch
West Branch	0.0/Mouth of West Branch
Bluelick Run	1.9/Mouth of West Branch
Bluelick Run	1.7/Downstream boundary of Savage River State Forest
Bluelick Run	0.0/Mouth of Bluelick Run
Savage River	13.6/Mouth of Bluelick Run
Savage River	13.59/Downstream limit of boundary of Savage River State Forest coincident with Savage River
Savage River	13.3/Mouth of Blacklick Run
Blacklick Run	3.4/Head of Blacklick Run
Blacklick Run	0.0/Mouth of Blacklick Run
Savage River	13.3/Mouth of Blacklick Run
Savage River	13.0/Mouth of Elklick Run
Elklick Run	____/Head of Elklick Run
Elklick Run	0.0/Mouth of Elklick Run
Savage River	13.0/Mouth of Elklick Run
Savage River	12.3/Mouth of Warnick Run
Warnick Run	0.9/Head of Warnick Run
Warnick Run	0.0/Mouth of Warnick Run
Savage River	12.3/Mouth of Warnick Run
Savage River	11.6/Mouth of Poplar Lick Run
Poplar Lick Run	____/Head of Poplar Lick Run
Poplar Lick Run	____/Boundary of Savage River State Forest
Poplar Lick Run	____/Upstream boundary of New Germany Recreation Area
Poplar Lick Run	____/Head of New Germany Reservoir
Poplar Lick Run	____/Dam, New Germany Reservoir
Poplar Lick Run	0.0/Mouth of Poplar Lick Run
Savage River	11.6/Mouth of Poplar Lick Run
Savage River	10.0/Gaging Station, Barton, Md. (D.A. 49.1)

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Savage River	9.1/Mouth of Bear Pen Run
Bear Pen Run	___/Head of Bear Pen Run
Bear Pen Run	1.6/Mouth of Silver Bell Run
Silver Bell Run	1.1/Head of Silver Bell Run
Silver Bell Run	0.0/Mouth of Silver Bell Run
Bear Pen Run	1.6/Mouth of Silver Bell Run
Bear Pen Run	0.0/Mouth of Bear Pen Run
Savage River	9.1/Mouth of Bear Pen Run
Savage River	7.4/Mouth of Big Run
Big Run	___/Head of Big Run
Big Run	3.9/Mouth of Miller Run
Miller Run	1.5/Head of Miller Run
Miller Run	0.0/Mouth of Miller Run
Big Run	3.9/Mouth of Miller Run
Big Run	0.8/Mouth of Monroe Run
Monroe Run	___/Head of Monroe Run
Monroe Run	0.0/Mouth of Monroe Run
Big Run	0.8/Mouth of Monroe Run
Big Run	0.0/Mouth of Big Run
Savage River	7.4/Mouth of Big Run
Savage River	5.9/Mouth of Pine Swamp Run
Pine Swamp Run	___/Head of Pine Swamp Run
Pine Swamp Run	0.0/Mouth of Pine Swamp Run
Savage River	5.9/Mouth of Pine Swamp Run
Savage River	5.7/Boundary of Savage River State Forest
Savage River	5.6/Mouth of Dry Run
Dry Run	2.8/Head of Dry Run
Dry Run	0.0/Mouth of Dry Run
Savage River	5.6/Mouth of Dry Run
Savage River	4.8/Mouth of Crabtree Creek
Crabtree Creek	7.8/Head of Crabtree Creek
Crabtree Creek	7.8/Mouth of North Fork
North Fork	___/Head of North Fork
North Fork	0.0/Mouth of North Fork
Crabtree Creek	7.8/Mouth of North Fork
Crabtree Creek	7.8/Mouth of South Fork
South Fork	___/Head of South Fork
South Fork	0.1/Bridge, B & O R.R.
South Fork	0.0/Mouth of South Fork
Crabtree Creek	7.8/Mouth of South Fork
Crabtree Creek	7.7/Bridge, Md. Highway #135
Crabtree Creek	7.4/Bridge, B & O R.R.
Crabtree Creek	7.3/Intake, B & O R.R.
Crabtree Creek	7.2/Bridge, B & O R.R.
Crabtree Creek	7.1/Mouth of Piney Run
Piney Run	1.3/Head of Piney Run
Piney Run	0.0/Mouth of Piney Run
Crabtree Creek	7.1/Mouth of Piney Run

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Crabtree Creek	4.5/Mouth of Maple Lick Run
Maple Lick Run	1.8/Head of Maple Lick Run
Maple Lick Run	0.0/Mouth of Maple Lick Run
Crabtree Creek	4.5/Mouth of Maple Lick Run
Crabtree Creek	3.0/Mouth of Spring Lick Run
Spring Lick Run	2.2/Head of Spring Lick Run
Spring Lick Run	0.0/Mouth of Spring Lick Run
Crabtree Creek	3.0/Mouth of Spring Lick Run
Crabtree Creek	1.6/Gaging Station, near Swanton, Md. (D. A. 16.7)
Crabtree Creek	1.3/Bridge, Secondary road at Floyd
Crabtree Creek	0.9/Mouth of Middle Fork
Middle Fork	___/Head of Middle Fork
Middle Fork	4.1/Mouth of Double Lick Run
Double Lick Run	1.3/Head of Double Lick Run
Double Lick Run	0.0/Mouth of Double Lick Run
Middle Fork	4.1/Mouth of Double Lick Run
Middle Fork	3.2/Mouth of Blackhawk Run
Blackhawk Run	1.9/Head of Blackhawk Run
Blackhawk Run	0.0/Mouth of Blackhawk Run
Middle Fork	3.2/Mouth of Blackhawk Run
Middle Fork	2.2/Boundary of Savage River State Forest
Middle Fork	1.2/Mouth of Toms Spring Run
Toms Spring Run	2.2/Head of Toms Spring Run
Toms Spring Run	0.0/Mouth of Toms Spring Run
Middle Fork	1.2/Mouth of Toms Spring Run
Middle Fork	1.1/Boundary of Savage River State Forest
Middle Fork	0.5/Boundary of Savage River State Forest
Middle Fork	0.0/Mouth of Middle Fork
Crabtree Creek	0.9/Mouth of Middle Fork
Crabtree Creek	0.0/Mouth of Crabtree Creek (D.A. 29.1)
Savage River	4.8/Mouth of Crabtree Creek
Savage River	4.6/Boundary of Savage River State Forest
Savage River	3.8/Savage River Dam
Savage River	3.7/Intake, City of Westernport, Md.
Savage River	3.7/Boundary of Savage River State Forest
Savage River	3.7/Gaging Station near Bloomington, Md. (D. A. 106.0)
Savage River	1.15/Bridge, Secondary road near Bloomington
Savage River	1.1/Mouth of Aaron Run
Aaron Run	___/Head of Aaron Run
Aaron Run	0.0/Mouth of Aaron Run
Savage River	1.1/Mouth of Aaron Run
Savage River	0.42/Gaging Station at Bloomington, Md. (D. A. 115.0)

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Savage River	0.08/Bridge, Md. Highway #135
Savage River	0.0/Mouth of Savage River (D. A. 116.4)
North Branch	53.5/Mouth of Savage River
North Branch	53.5/County Line, Upstream - Garrett Co,, Md. Downstream - Allegany Co., Md. (Tri-county corner, Garrett and Allegany Counties, Md. and Mineral County W. Va.)
North Branch***	53.1/Sampling Station maintained by W. Va. Pulp and Paper
North Branch	53.0/Gaging Station at Luke, Md. (D.A. 404.0)
North Branch	52.9/Mouth of Montgomery Run
Montgomery Run	2.5/Head of Montgomery Run, W. Va.
Montgomery Run	0.2/Bridge, W. Va. Highway #46
Montgomery Run	0.1/Bridge, B & O R.R.
Montgomery Run	0.05/Bridge, Western Md. R.R.
Montgomery Run	0.0/Mouth of Montgomery Run at Beryl, W. Va.
North Branch	52.9/Mouth of Montgomery Run
North Branch	52.8/Outfall, W. Va. Pulp & Paper Co., Cooling Water
North Branch	52.8/W. Va. Pulp & Paper Co. Dam
North Branch	52.76/Bridge, Western Md. R.R.
North Branch	52.7/Intake, W. Va. Pulp & Paper Co.
North Branch	52.7/Bridge, B & O R.R.
North Branch	52.65/Outfall, W. Va. Pulp & Paper Co. Supernatant from ash-settling lagoon, W. Va. side of stream
North Branch	52.65/Outfall, W. Va. Pulp & Paper Co., Cooling water discharge - Md. side of stream
North Branch	52.5/Intake, Luke, Md.
North Branch	/Outfall, Piedmont, W. Va.
North Branch	52.4/Sampling Station, W. Va. Pulp & Paper
North Branch	52.1/Bridge, W. Va. Highway #46/3
North Branch	51.44/Bridge, C & P R.R.
North Branch	51.4/Mouth of Georges Creek
Georges Creek	/Head of Georges Creek, Md.
Georges Creek	15.9/Bridge, Cum & Pa R.R.
Georges Creek	15.7/Outfall, Frostburg, Md.
Georges Creek	15.5/Mouth of Sand Spring Run
Sand Spring Run	3.4/Head of Sand Spring Run
Sand Spring Run	3.4/Outfall, John Lotts Slaughter-house
Sand Spring Run	2.2/Outfall, Engle Bros. Slaughter-house
Sand Spring Run	1.5/Outfall, Frostburg, Md.
Sand Spring Run	0.0/Mouth of Sand Spring Run
Georges Creek	15.5/Mouth of Sand Spring Run
Georges Creek	15.1/Bridge, Cum & Pa R.R.

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Georges Creek	14.2/Mouth of Winebrenner Run
Winebrenner Run	___/Head of Winebrenner Run, Md.
Winebrenner Run	2.3/County Line, Upstream - Garrett Co. Downstream - Allegany Co.
Winebrenner Run	0.0/Mouth of Winebrenner Run
Georges Creek	14.2/Mouth of Winebrenner Run
Georges Creek	13.7/Mouth of Vale Run
Vale Run	1.2/Head of Vale Run
Vale Run	0.2/Bridge, Md. Highway #36
Vale Run	0.17/Bridge, Cum & Pa R.R.
Vale Run	0.0/Mouth of Vale Run
Georges Creek	13.7/Mouth of Vale Run
Georges Creek	12.7/Bridge, Cum & Pa R.R.
Georges Creek	12.7/Carlos Junction, Md.
Georges Creek	___/Intake & Outfall, Consolidated Coal Company
Georges Creek	12.5/Mouth of Staub Run
Staub Run	___/Head of Staub Run, Md.
Staub Run	___/Intake, Borden Shaft
Staub Run	2.6/County Line, Upstream - Garrett Co. Downstream - Allegany Co., Md.
Staub Run	0.7/Mouth of Woodland Creek
Woodland Creek	___/Head of Woodland Creek
Woodland Creek	1.6/County Line, Upstream - Garrett Co. Downstream - Allegany Co.
Woodland Creek	___/Intake, Lord, Md.
Woodland Creek	0.0/Mouth of Woodland Creek
Staub Run	0.7/Mouth of Woodland Creek
Staub Run	0.0/Mouth of Staub Run
Georges Creek	12.5/Mouth of Staub Run
Georges Creek	11.9/Bridge, Cum & Pa R.R.
Georges Creek	11.5/Paradise, Md.
Georges Creek	11.45/Mouth of Neff Run
Neff Run	___/Head of Neff Run
Neff Run	1.8/Mouth of Matthew Run
Matthew Run	___/Head of Matthew Run
Matthew Run	0.1/Bridge, Md. Highway #55
Matthew Run	0.0/Mouth of Matthew Run
Neff Run	1.8/Mouth of Matthew Run
Neff Run	0.7/Bridge, Md. Highway #55
Neff Run	0.1/Bridge, Md. Highway #36
Neff Run	0.0/Mouth of Neff Run
Georges Creek	11.45/Mouth of Neff Run
Georges Creek	11.4/Bridge, Cum & Pa R.R.
Georges Creek	11.3/Mouth of Squirrel Neck Run
Squirrel Neck Run	___/Head of Squirrel Neck Run
Squirrel Neck Run	0.0/Mouth of Squirrel Neck Run
Georges Creek	11.3/Mouth of Squirrel Neck Run

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Georges Creek	___/Outfall, Borden Shaft
Georges Creek	11.2/Outfall, Dashiell Dairy, Inc.
Georges Creek	11.05/Midland, Md.
Georges Creek	10.6/Mouth of Elklick Run
Elklick Run	___/Head of Elklick Run
Elklick Run	1.1/Midland-Gilmore Reservoir
Elklick Run	0.25/Bridge, W. Md. R.R.
Elklick Run	0.2/Bridge, Md. Highway #36
Elklick Run	0.1/Bridge, Cum & Pa R.R.
Elklick Run	0.0/Mouth of Elklick Run
Georges Creek	10.6/Mouth of Elklick Run
Georges Creek	10.25/Bridge, Cum & Pa R.R.
Georges Creek	10.2/Bridge, Md. Highway #36
Georges Creek	9.3/Bridge, Md. Highway #36
Georges Creek	9.2/Bridge, Cum & Pa R.R.
Georges Creek	8.5/Bridge, Md. Highway #36
Georges Creek	8.4/Mouth of Hill Run
Hill Run	___/Head of Hill Run
Hill Run	0.01/Bridge, Cum & Pa R.R.
Hill Run	0.0/Mouth of Hill Run
Georges Creek	8.4/Mouth of Hill Run
Georges Creek	8.1/Mouth of Koontz Run
Koontz Run	___/Head of Koontz Run, Garrett Co.
Koontz Run	2.0/County Line, Upstream - Garrett Co. Downstream - Allegany Co.
Koontz Run	0.1/Bridge, Md. Highway #36
Koontz Run	0.0/Mouth of Koontz Run
Georges Creek	8.1/Mouth of Koontz Run
Georges Creek	8.05/Lonaconing, Md.
Georges Creek	___/Intake & Outfall, Lonaconing, Md.
Georges Creek	8.0/Mouth of Jackson Run
Jackson Run	___/Head of Jackson Run
Jackson Run	1.1/Lonaconing Reservoir
Jackson Run	0.05/Bridge, Cum & Pa R.R.
Jackson Run	0.0/Mouth of Jackson Run
Georges Creek	8.0/Mouth of Jackson Run
Georges Creek	7.5/Bridge, Cum & Pa R.R.
Georges Creek	5.8/Mouth of Laurel Run
Laurel Run	___/Head of Laurel Run, Garrett Co.
Laurel Run	1.4/County Line, Upstream - Garrett Co. Downstream - Allegany Co.
Laurel Run	0.0/Mouth of Laurel Run
Georges Creek	5.8/Mouth of Laurel Run
Georges Creek	5.75/Moscow Mills, Md.
Georges Creek	4.95/Mouth of Butcher Run
Butcher Run	___/Head of Butcher Run, Garrett Co.
Butcher Run	1.1/Barton Reservoir
Butcher Run	0.9/County Line, Upstream - Garrett Co. Downstream - Allegany Co.

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Butcher Run	0.0/Mouth of Butcher Run
Georges Creek	4.95/Mouth of Butcher Run
Georges Creek	4.9/Town of Barton, Md.
Georges Creek	4.3/Mouth of Moores Run
Moores Run	___/Head of Moores Run
Moores Run	0.0/Mouth of Moores Run
Georges Creek	4.3/Mouth of Moores Run
Georges Creek	3.2/Mouth of Mill Run
Mill Run	___/Head of Mill Run, Garrett Co.
Mill Run	1.6/Mouth of Michaels Run
Michaels Run	___/Head of Michaels Run
Michaels Run	0.0/Mouth of Michaels Run
Mill Run	1.6/Mouth of Michaels Run
Mill Run	1.3/County Line, Upstream - Garrett Co. Downstream - Allegany Co.
Mill Run	0.0/Mouth of Mill Run
Georges Creek	3.2/Mouth of Mill Run
Georges Creek	___/Mouth of Bartlett Run
Bartlett Run	___/Head of Bartlett Run
Bartlett Run	___/Intake, Barton, Md.
Bartlett Run	0.0/Mouth of Bartlett Run
Georges Creek	___/Mouth of Bartlett Run
Georges Creek	___/Outfall, Barton, Md.
Georges Creek	1.25/Gaging Station, Franklin, Md. (D. A. 72.4)
Georges Creek	0.83/Bridge, Foot Bridge
Georges Creek	0.23/Bridge, C & P R.R.
Georges Creek	0.1/Sampling Station, Upper Potomac River Waste Treatment Facility
Georges Creek	0.06/Bridge, C & P R.R.
Georges Creek	0.02/Bridge, W. Md. R.R.
Georges Creek	0.0/Mouth of Georges Creek
North Branch	51.4/Mouth of Georges Creek
North Branch	51.4/Bridge, W. Va. Highway #36, Piedmont, W. Va. to Westernport, Md.
North Branch	51.0/Outfall, Upper Potomac River Commission
North Branch	50.3/Mouth of Slaughterhouse Run, W. Va.
Slaughterhouse Run	1.7/Head of Slaughterhouse Run, W. Va.
Slaughterhouse Run	0.1/Bridge, W. Va. Highway #46
Slaughterhouse Run	0.05/Bridge, B & O R.R.
Slaughterhouse Run	0.0/Mouth of Slaughterhouse Run
North Branch	50.3/Mouth of Slaughterhouse Run, W. Va.
North Branch	49.6/Mouth of Powder House Run
Powder House Run	___/Head of Powder House Run
Powder House Run	0.1/Bridge, W. Va. Highway #46
Powder House Run	0.05/Bridge, B & O R.R.
Powder House Run	0.0/Mouth of Powder House Run
North Branch	49.6/Mouth of Powder House Run

DISTANCE FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
North Branch	49.1/Mouth of Stoney Run, Md.
Stoney Run	____/Head of Stoney Run
Stoney Run	0.05/Bridge, Md. Highway #135
Stoney Run	0.02/Bridge, W. Md. R.R.
Stoney Run	0.0/Mouth of Stoney Run
North Branch	49.1/Mouth of Stoney Run
North Branch	47.3/Mouth of Dry Run, Md.
Dry Run	____/Head of Dry Run
Dry Run	0.0/Mouth of Dry Run (D. A. 22.5)
North Branch	47.3/Mouth of Dry Run, Md.
North Branch	47.1/Mouth of Thunderhill Run, W. Va.
Thunderhill Run	____/Head of Thunderhill Run
Thunderhill Run	0.4/Bridge, B & O R.R.
Thunderhill Run	0.0/Mouth of Thunderhill Run
North Branch	47.1/Mouth of Thunderhill Run
North Branch	46.1/Bridge, at Keyser, W. Va., U.S. #220
North Branch	46.0/Mouth of New Creek
New Creek	____/Head of New Creek
New Creek	5.7/Mouth of King Run
King Run	____/Head of King Run
King Run	0.05/Bridge, U. S. Highway #220
King Run	0.0/Mouth of King Run
New Creek	5.7/Mouth of King Run
New Creek	5.3/Mouth of Hoffman Run
Hoffman Run	____/Head of Hoffman Run
Hoffman Run	0.05/Bridge, U. S. Highway #220
Hoffman Run	0.0/Mouth of Hoffman Run
New Creek	5.3/Mouth of Hoffman Run
New Creek	3.3/Mouth of Block Run
Block Run	____/Head of Block Run
Block Run	0.05/Bridge, U. S. Highway #220
Block Run	0.0/Mouth of Block Run
New Creek	3.3/Mouth of Block Run
New Creek	2.9/Mouth of Parr Spring Run
Parr Spring Run	____/Head of Parr Spring Run
Parr Spring Run	0.05/Bridge, U. S. Highway #220
Parr Spring Run	0.0/Mouth of Parr Spring Run
New Creek	2.9/Mouth of Parr Spring Run
New Creek	2.4/Mouth of Stony Run, W. Va.
Stony Run	____/Head of Stony Run
Stony Run	0.05/Bridge, U. S. Highway #220
Stony Run	0.0/Mouth of Stony Run
New Creek	2.4/Mouth of Stony Run
New Creek	1.3/Town Limit of Keyser, Mineral Co.
New Creek	___/Intake, Keyser, W. Va.
New Creek	___/Intake, Royal Dairy, Keyser, W. Va.
New Creek	0.4/Bridge, W. Va. Highway #46
New Creek	0.3/Bridge, B & O R.R.

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterways) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterways) 1 2 3 4 5 6
New Creek	0.0/Mouth of New Creek
North Branch	46.0/Mouth of New Creek
North Branch	____/Outfall, Keyser W. Va.
North Branch	____/Outfall, Royal Dairy, Keyser W. Va.
North Branch	45.9/Sampling Station, W. Va. Pulp & Paper
North Branch	45.5/Mouth of Limestone Run, W. Va.
Limestone Run	____/Head of Limestone Run
Limestone Run	4.0/Keyser Reservoir
Limestone Run	0.8/Mouth of Willow Run
Willow Run	1.0/Head of Willow Run
Willow Run	0.0/Mouth of Willow Run
Limestone Run	0.8/Mouth of Willow Run
Limestone Run	0.2/Bridge, W. Va. Highway #46
Limestone Run	0.0/Mouth of Limestone Run
North Branch	45.5/Mouth of Limestone Run
North Branch	45.4/Sampling Station, W. Va. Dept. of Natl. Resources
North Branch	44.3/Bridge, B & O R.R. (21st St. Bridge)
North Branch	41.7/Bridge, W. Md. R.R. near Dawson, Md.
North Branch	40.9/Sampling Station, W. Va. Dept. of Natl. Resources
North Branch	40.7/Bridge, Western Md. R.R.
North Branch	37.0/Rawlings Dam Site
North Branch	36.6/Mouth of Ashcabin Run, W. Va.
Ashcabin Run	____/Head of Ashcabin Run
Ashcabin Run	0.0/Mouth of Ashcabin Run
North Branch	36.6/Mouth of Ashcabin Run
North Branch	32.6/Gaging Station, Pinto, Md. (D.A. 596.0)
North Branch	32.6/Bridge, Western Md. R.R.
North Branch	32.5/Outfall, Hercules Powder, Allegheny Ballistics Corporation
North Branch	32.5/Bridge, Md. Highway #53
North Branch	31.8/Bridge, Western Md. R.R.
North Branch	30.9/Bridge, B & O R.R.
North Branch	30.0/Bridge, W. Md. R.R. at Riverside, W.Va.
North Branch	____/Intake, Celanese Corp.
North Branch	28.9/Sampling Station, Celanese Fibers Co.
North Branch	28.4/Sampling Station, Celanese Fibers Co.
North Branch	27.9/Outfall, Bowling Green, Allegany Co. Sanitary Commission
North Branch	27.6/Mouth of Warrior Run, Md.
Warrior Run	____/Head of Warrior Run
Warrior Run	1.5/Bridge, Md. Highway #53
Warrior Run	0.8/Bridge, U.S. Highway #220
Warrior Run	0.3/Bridge, B & O R.R.
Warrior Run	0.0/Mouth of Warrior Run
North Branch	27.6/Mouth of Warrior Run
North Branch	27.2/Outfall, Cellanese Corp. of America

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
North Branch	27.2/Outfall, Town of Ancelle, Discharge with Cellanese Corp.
North Branch	27.2/Intake & Outfall, Potomac Edison Co., Ancelle, Maryland
North Branch	23.5/Outfall, Western Md. R.R. Shop in Ridgely, W. Va.
North Branch	___/Intake, Kelley-Springfield Tire Company
North Branch	23.4/Sampling Station, Kelley-Springfield Tire Company
North Branch	22.9/Sampling Station, Kelley-Springfield Tire Company
North Branch	22.8/Outfall, Kelley-Springfield Tire Co. Cooling Water
North Branch	22.5/Outfall, Potomac Edison (Cooling Water) Steam-electric generating
North Branch	21.8/Bridge, Johnson St. Bridge, Cumberland
North Branch	21.71/Mouth of Wills Creek
Wills Creek	___/Head of Wills Creek, Pa.
Wills Creek	7.0/Pumping Station
Wills Creek	6.9/Bridge, W. Md. R.R.
Wills Creek	___/Mouth of Little Wills Creek
Little Wills Creek	___/Head of Little Wills Creek
Little Wills Creek	___/Intake & Outfall, Hyndman, Pa.
Little Wills Creek	0.0/Mouth of Little Wills Creek
Wills Creek	___/Mouth of Little Wills Creek
Wills Creek	___/Gaging Station below Hyndman, Pa.
Wills Creek	___/Outfall, Wellersburg, Pa.
Wills Creek	6.7/State and County Line, Upstream - Bedford Co., Pa. Downstream - Allegany Co., Md.
Wills Creek	4.4/Mouth of Jennings Run
Jennings Run	___/Head of Jennings Run
Jennings Run	8.1/Bridge, Md. Highway #36
Jennings Run	7.7/Bridge, Md. Highway #36
Jennings Run	5.5/Bridge, Md. Highway #36
Jennings Run	5.0/Bridge, Md. Highway #36
Jennings Run	3.6/Mouth of North Branch, Jennings Run
North Branch	___/Head of North Branch
North Branch	1.8/State and County Line, Upstream - Somerset, Co., Pa. Downstream - Allegany Co., Md.
North Branch	1.0/Bridge, Md. Highway #47
North Branch	0.3/Bridge, Md. Highway #47
North Branch	0.0/Mouth of North Branch
Jennings Run	3.6/Mouth of North Branch, Jennings Run
Jennings Run	1.6/Bridge, Pa. R.R.

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Jennings Run	0.25/Bridge, Pa. R.R.
Jennings Run	0.2/Bridge, Md. Highway #36
Jennings Run	0.01/Bridge, Cum & Pa R.R.
Jennings Run	0.0/Mouth of Jennings Run (D.A. 37.7)
Wills Creek	4.4/Mouth of Jennings Run
Wills Creek	4.1/Outfall, Frye Coal & Stone Co.
Wills Creek	3.1/Intake & Outfall, Cumberland Cement & Supply Company
Wills Creek	3.0/Bridge, B & O R.R.
Wills Creek	___/Intake & Outfall, Cumberland Coal Co.
Wills Creek	2.27/Mouth of Braddock Run
Braddock Run	___/Head of Braddock Run
Braddock Run	7.5/Bridge, Md. Highway #55
Braddock Run	7.1/Eckhart Mines
Braddock Run	7.1/Bridge, U. S. Highway #40
Braddock Run	4.5/Bridge, U. S. Highway #40
Braddock Run	1.6/Bridge, U. S. Highway #40
Braddock Run	0.2/Bridge, Md. Highway #36
Braddock Run	0.05/Bridge, W. Md. R.R.
Braddock Run	0.0/Mouth of Braddock Run (D.A. 17.5)
Wills Creek	2.27/Mouth of Braddock Run
Wills Creek	2.04/Gaging Station, Cumberland, Md. (D. A. 247.0)
Wills Creek	1.5/Sampling Station, Kelley-Springfield Tire Co.
Wills Creek	1.38/Bridge, Md. Highway #40
Wills Creek	1.15/Bridge, W. Md. R.R.
Wills Creek	0.66/Bridge, Valley Street
Wills Creek	0.51/Bridge, B & O R.R.
Wills Creek	0.38/Bridge, Market Street
Wills Creek	0.19/Bridge, W. Md. R.R.
Wills Creek	0.15/Bridge, Baltimore St.
Wills Creek	0.0/Mouth of Wills Creek (D.A. 253.6)
North Branch	21.71/Mouth of Wills Creek
North Branch	21.7/Upstream junction of C & O Canal with North Branch of Potomac
North Branch	21.7/Bridge, W. Md. R.R. #1656
North Branch	21.6/Bridge, W. Md. R.R. #1657-A
North Branch	20.2/Bridge, W. Md. R.R. #1635
North Branch	19.9/Sampling Station, Cumberland Sewage Treatment Plant
North Branch	19.6/Bridge, Wileys Ford Bridge
North Branch	19.6/Gaging Station, Cumberland, Md. at Wiley Ford Bridge (D. A. 875.0)
North Branch	18.9/Bridge, W. Md. R.R. #1625
North Branch	18.2/Outfall, Cumberland - Includes several industrial discharges
North Branch	___/Outfall, Union Tanning Company

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
North Branch	____/Outfall, Cumberland Laundry Co.
North Branch	____/Outfall, N & G Taylor Co.
North Branch	17.5/Mouth of Evitts Creek
Evitts Creek	____/Head of Evitts Creek, Pa.
Evitts Creek	____/Intake, Pa.
Evitts Creek	____/Gaging Station near Centerville, Pa.
Evitts Creek	14.3/Gordon Lake
Evitts Creek	11.9/State and County Line, Upstream - Bedford,Co., Pa. Downstream - Allegany Co., Md.
Evitts Creek	10.3/Mouth of Rocky Gap Run
Rocky Gap Run	____/Head of Rocky Gap Run, Pa.
Rocky Gap Run	5.1/State and County Line, Upstream - Bedford Co., Pa. Downstream - Allegany Co., Md.
Rocky Gap Run	0.0/Mouth of Rocky Gap Run
Evitts Creek	10.3/Mouth of Rocky Gap Run
Evitts Creek	10.25/Bridge, Mason Road
Evitts Creek	8.6/Mouth of Pea Vine Run
Pea Vine Run	____/Head of Pea Vine Run
Pea Vine Run	1.3/Bridge, U. S. Highway #220
Pea Vine Run	0.2/Bridge, Mason Road
Pea Vine Run	0.0/Mouth of Pea Vine Run
Evitts Creek	8.6/Mouth of Pea Vine Run
Evitts Creek	6.4/Bridge, U. S. #40
Evitts Creek	5.4/Mouth of Elk Lick Run
Elk Lick Run	____/Head of Elk Lick Run
Elk Lick Run	2.7/Bridge, U. S. #40
Elk Lick Run	2.1/Mouth of Cabin Run
Cabin Run	____/Head of Cabin Run
Cabin Run	0.0/Mouth of Cabin Run
Elk Lick Run	2.1/Mouth of Cabin Run
Elk Lick Run	1.5/Bridge, U. S. #40
Elk Lick Run	1.3/Bridge, U. S. #40
Elk Lick Run	0.0/Mouth of Elk Lick Run
Evitts Creek	5.4/Mouth of Elk Lick Run
Evitts Creek	5.0/Bridge, Christie Road
Evitts Creek	2.3/Mouth of Willow Brook
Willow Brook	____/Head of Willow Brook
Willow Brook	0.0/Mouth of Willow Brook
Evitts Creek	2.3/Mouth of Willow Brook
Evitts Creek	1.8/Bridge, Williams Road
Evitts Creek	0.3/Bridge, Md. Highway #51
Evitts Creek	____/Intake, Cumberland, Md.
Evitts Creek	____/Intake, Union Tanning Company
Evitts Creek	____/Intake, Cumberland Laundry Co.
Evitts Creek	____/N & G Taylor Co.
Evitts Creek	____/Gaging Station, Cumberland, Md. (D. A. 89.0)
Evitts Creek	0.0/Mouth of Evitts Creek (D.A. 94.0)

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterways) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterways) 1 2 3 4 5 6
North Branch	17.5/Mouth of Evitts Creek
North Branch	17.4/Sampling Station, Cumberland Sewage Treatment Plant
North Branch	15.0/Bridge, Western Md. R.R.
North Branch	___/Intake, Pittsburgh Plate Glass Co.
North Branch	11.3/Outfall, Pittsburgh Plate Glass Co., Industrial Waste
North Branch	11.1/Outfall, Pittsburgh Plate Glass Co., Sanitary Sewage
North Branch	10.8/Bridge, B & O R.R.
North Branch	9.2/Mouth of Collier Run, Md.
Collier Run	10.0/Head of Collier Run
Collier Run	0.3/Bridge, W. Md. R.R.
Collier Run	0.2/Bridge, Md. Highway #51
Collier Run	0.0/Mouth of Collier Run
North Branch	9.2/Mouth of Collier Run, Md.
North Branch	9.0/Mouth of Patterson Creek, W. Va.
Patterson Creek	___/Head of Patterson Creek
Patterson Creek	4.8/Bridge, W. Va. Highway #28
Patterson Creek	4.0/Mouth of Keller Run
Keller Run	___/Head of Keller Run
Keller Run	0.0/Mouth of Keller Run
Patterson Creek	4.0/Mouth of Keller Run
Patterson Creek	3.7/Mouth of Turners Run
Turners Run	___/Head of Turners Run
Turners Run	0.0/Mouth of Turners Run
Patterson Creek	3.7/Mouth of Turners Run
Patterson Creek	1.6/Mouth of Plum Run
Plum Run	___/Head of Plum Run
Plum Run	0.0/Mouth of Plum Run
Patterson Creek	1.6/Mouth of Plum Run
Patterson Creek	0.6/Mouth of Rocky Run
Rocky Run	___/Head of Rocky Run
Rocky Run	0.0/Mouth of Rocky Run
Patterson Creek	0.6/Mouth of Rocky Run
Patterson Creek	0.1/Bridge, B & O R.R.
Patterson Creek	___/Outfall, Burlington W. Va.
Patterson Creek	___/Outfall, Fort Ashley, W. Va.
Patterson Creek	___/Outfall, Patterson Creek, W. Va.
Patterson Creek	0.0/Mouth of Patterson Creek (D.A. 278.5)
North Branch	9.0/Mouth of Patterson Creek, W. Va.
North Branch	7.5/Mouth of Brice Hollow Run, Md.
Brice Hollow Run	7.0/Head of Brice Hollow Run
Brice Hollow Run	1.1/Bridge, Md. Highway #51
Brice Hollow Run	0.2/Bridge, W. Md. R.R.
Brice Hollow Run	0.0/Mouth of Brice Hollow Run
North Branch	7.5/Mouth of Brice Hollow Run, Md.

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
North Branch	6.7/Mouth of Dans Run, W. Va.
Dans Run	___/Head of Dans Run
Dans Run	0.05/Bridge, B & O R.R.
Dans Run	0.0/Mouth of Dans Run
North Branch	6.7/Mouth of Dans Run
North Branch	2.4/Bridge, W. Va. Highway #1
North Branch	2.0/County Line, Upstream - Allegany Co., Md. and Mineral Co., W. Va. Downstream - Allegany Co., Md. and Hampshire, W. Va.
North Branch****	1.8/Mouth of Green Spring Run, W. Va.
Green Spring Run	___/Head of Green Spring Run
Green Spring Run	0.7/Bridge, B & O R.R.
Green Spring Run	0.5/Bridge, W. Va. Highway #1
Green Spring Run	0.0/Mouth of Green Spring Run
North Branch	1.8/Mouth of Green Spring Run
North Branch	1.4/Mouth of Mill Run, Md.
Mill Run	___/Head of Mill Run
Mill Run	4.2/Bridge, Md. Highway #51
Mill Run	1.9/Bridge, W. Md. R.R.
Mill Run	0.6/Mouth of Seven Springs Run
Seven Springs Run	___/Head of Seven Springs Run
Seven Springs Run	3.1/Bridge, Wilson Road
Seven Springs Run	1.6/Mouth of Trading Run
Trading Run	___/Head of Trading Run
Trading Run	0.0/Mouth of Trading Run
Seven Springs Run	1.6/Mouth of Trading Run
Seven Springs Run	0.2/Bridge, Md. Highway #51
Seven Springs Run	0.15/Bridge, W. Md. R.R.
Seven Springs Run	0.0/Mouth of Seven Springs Run
Mill Run	0.6/Mouth of Seven Springs Run
Mill Run	0.4/C & O Canal
Mill Run	___/Intake, Conda A. Smith near Rawlings
Mill Run	0.0/Mouth of Mill Run
North Branch	1.4/Mouth of Mill Run
North Branch	___/Outfall, Koppers Co., W. Va.
North Branch	0.0/Mouth of North Branch (D. A. 1,328.3)
POTOMAC RIVER	285.1/Mouth of North Branch

D. A. Drainage Area, square miles

* From mile point 93.0 to mile point 78.3, the North Branch of the Potomac River is boundary between Grant County, West Virginia and Garrett County, Maryland.

** From mile point 77.7 to mile point 53.5, the North Branch of the Potomac River is boundary between Mineral County, West Virginia and Garrett County, Maryland.

*** From mile point 53.1 to mile point 2.0, the North Branch of the Potomac River is boundary between Mineral County, West Virginia and Allegany County, Md.

**** From mile point 1.8 to mile point 0.0 the North Branch of the Potomac River is boundary between Hampshire County, West Virginia and Allegany County, Maryland.

January, 1965

ADDENDUM-APPENDIX A
POTOMAC RIVER DRAINAGE AREA
NORTH BRANCH SUB-BASIN

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Page 13	
Potomac River	28.51-
North Branch	51.2/ Outfall, Piedmont, W. Va.
Page 15	
North Branch	45.4/ Outfall, Keyser, W. Va.
North Branch	35.0/ Mouth of Mill Run
Mill Run	__/ Head of Mill Run
Mill Run	__/ Intake, Rawlings Heights
Mill Run	0.0/ Mouth of Mill Run
North Branch	35.0/ Mouth of Mill Run
North Branch	32.7/ Outfall, Bel Air, Md.
North Branch	32.6/ Outfall, Barton's Dairy, Pinto, Maryland
North Branch	29.7/ Outfall, Masons Dairy, Cresaptown, Maryland
North Branch	29.5/ Outfall, Cresaptown, Md.
Page 16	
North Branch	25.0/ Outfall, Bowling Green, Md.
Page 17	
North Branch	21.7-
Wills Creek	4.1/ Outfall, Appalachia Stone Div., Martin Marietta Corp.
Wills Creek	3.1/ Outfall, Manley Sand Div., Martin Marietta Corp.
Wills Creek	2.3-
Braddock Run	__/ Outfall, LaVale, Md.
Page 18	
North Branch	17.5-
Evitts Creek	2.0/ Outfall, Growdenvale, Md.

Delete the following entry:

Page 15	
North Branch	__/ Outfall, Keyser, W. Va.

POTOMAC RIVER DRAINAGE BASIN

North Branch to Monocacy River SUB-BASIN

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
POTOMAC RIVER	285.1/Mouth of South Branch, Potomac River
South Branch	____/Head of South Branch, West Virginia
South Branch	____/Gaging Station near Springfield, W. Va. (D. A. 1,471.0)
South Branch	0.0/Mouth of South Branch (D. A. 1,487.6)
POTOMAC RIVER	285.1/Mouth of South Branch, Potomac River
POTOMAC RIVER	282.5/Mouth of Town Creek, Md.
Town Creek	____/Head of Town Creek, Pa.
Town Creek	28.5/State and County Line, Upstream - Bedford Co., Pa. Downstream - Allegany Co., Md.
Town Creek	24.5/Mouth of Flintstone Creek, Md.
Flintstone Creek	____/Head of Flintstone Creek, Pa.
Flintstone Creek	3.9/State and County Line, Upstream - Bedford Co., Pa. Downstream - Allegany Co., Md.
Flintstone Creek	0.0/Mouth of Flintstone Creek
Town Creek	24.5/Mouth of Flintstone Creek
Town Creek	22.0/Mouth of Murley Branch
Murley Branch	____/Head of Murley Branch
Murley Branch	0.0/Mouth of Murley Branch
Town Creek	22.0/Mouth of Murley Branch
Town Creek	15.9/Mouth of Lick Run
Lick Run	____/Head of Lick Run
Lick Run	0.0/Mouth of Lick Run
Town Creek	15.9/Mouth of Lick Run
Town Creek	15.3/Mouth of Peters Run
Peters Run	____/Head of Peters Run
Peters Run	0.0/Mouth of Peters Run
Town Creek	15.3/Mouth of Peters Run
Town Creek	9.9/Mouth of Maple Run
Maple Run	____/Head of Maple Run
Maple Run	0.0/Mouth of Maple Run
Town Creek	9.9/Mouth of Maple Run
Town Creek	7.0/Bridge, Maniford Road
Town Creek	4.2/Bridge, Old Town Road
Town Creek	3.0/Gaging Station near Oldtown, Md. (D.A. 148.0)
Town Creek	2.1/Mouth of Sawpit Run
Sawpit Run	____/Head of Sawpit Run
Sawpit Run	2.5/Bridge, Md. Highway #51
Sawpit Run	0.9/Gaging Station near Oldtown, Md. Highway #51
Sawpit Run	0.0/Mouth of Sawpit Run
Town Creek	2.1/Mouth of Sawpit Run
Town Creek	1.3/Bridge, Md. Highway #51
Town Creek	0.1/Bridge, Western Md. R.R.
Town Creek	0.0/Mouth of Town Creek (D. A. 156.1)
POTOMAC RIVER	282.5/Mouth of Town Creek
POTOMAC RIVER	279.7/Mouth of Little Cacapon River

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Little Cacapon River	___/Head of Little Cacapon River
Little Cacapon River	0.6/Mouth of Smith Hollow
Smith Hollow	___/Head of Smith Hollow
Smith Hollow	0.0/Mouth of Smith Hollow
Little Cacapon River	0.6/Mouth of Smith Hollow
Little Cacapon River	0.4/Mouth of Lapley Hollow
Lapley Hollow	___/Head of Lapley Hollow
Lapley Hollow	0.0/Mouth of Lapley Hollow
Little Cacapon River	0.4/Mouth of Lapley Hollow
Little Cacapon River	0.0/Mouth of Little Cacapon River (D.A. 113.8)
POTOMAC RIVER	279.7/Mouth of Little Cacapon River
POTOMAC RIVER	278.2/Mouth of The Nose Hollow
The Nose Hollow	1.5/Head of The Nose Hollow
The Nose Hollow	0.3/County Line, Upstream - Hampshire, W. Va. Downstream - Morgan, W. Va.
The Nose Hollow	0.0/Mouth of The Nose Hollow
POTOMAC RIVER	278.2/Mouth of The Nose Hollow
POTOMAC RIVER	277.2/Mouth of Purslane Run, Md.
Purslane Run	___/Head of Purslane Run
Purslane Run	2.1/Mouth of Rock Lick Hollow
Rock Lick Hollow	___/Head of Rock Lick Hollow
Rock Lick Hollow	0.3/Bridge, Md. Highway #51
Rock Lick Hollow	0.0/Mouth of Rock Lick Hollow
Purslane Run	2.1/Mouth of Rock Lick Hollow
Purslane Run	1.7/Mouth of Nancy Hollow
Nancy Hollow	___/Head of Nancy Hollow
Nancy Hollow	0.2/Bridge, Md. Highway #51
Nancy Hollow	0.0/Mouth of Nancy Hollow
Purslane Run	1.7/Mouth of Nancy Hollow
Purslane Run	1.2/Mouth of Montgomery Hollow
Montgomery Hollow	___/Head of Montgomery Hollow
Montgomery Hollow	0.2/Bridge, Md. Highway #51
Montgomery Hollow	0.0/Mouth of Montgomery Hollow
Purslane Run	1.2/Mouth of Montgomery Hollow
Purslane Run	0.0/Mouth of Purslane Run
POTOMAC RIVER	277.2/Mouth of Purslane Run
POTOMAC RIVER	276.8/Town of Paw Paw, W. Virginia
POTOMAC RIVER	276.6/Gaging Station, near Paw Paw, W. Va. (D. A. 3,109.0)
POTOMAC RIVER	276.5/Bridge, Md. Highway #51 and W. Va. #9
POTOMAC RIVER	276.3/Mouth of Bullet Run
Bullet Run	___/Head of Bullet Run
Bullet Run	0.8/Bridge, W. Va. Highway #9
Bullet Run	0.6/Bridge, B & O R.R.
Bullet Run	0.0/Mouth of Bullet Run
POTOMAC RIVER	276.3/Mouth of Bullet Run
POTOMAC RIVER	275.4/Bridge, Western Md. R.R.
POTOMAC RIVER	274.45/Bridge, Western Md. R.R.
POTOMAC RIVER	273.7/Mouth of Big Run, W. Va.

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Big Run	___/Head of Big Run, W. Va.
Big Run	0.5/Mouth of Kate Hollow
Kate Hollow	___/Head of Kate Hollow
Kate Hollow	0.0/Mouth of Kate Hollow
Big Run	0.5/Mouth of Kate Hollow
Big Run	0.2/Bridge, B & O R.R.
Big Run	0.0/Mouth of Big Run
POTOMAC RIVER	273.7/Mouth of Big Run
POTOMAC RIVER	272.1/Bridge, B & O R.R.
POTOMAC RIVER	271.2/Mouth of Steer Run, W. Va.
Steer Run	___/Head of Steer Run
Steer Run	0.4/Mouth of Sharon Run
Sharon Run	___/Head of Sharon Run
Sharon Run	0.0/Mouth of Sharon Run
Steer Run	0.4/Mouth of Sharon Run
Steer Run	0.0/Mouth of Steer Run
POTOMAC RIVER	271.2/Mouth of Steer Run
POTOMAC RIVER	271.1/Mouth of Little Steer Run, W. Va.
Little Steer Run	0.6/Head of Little Steer Run
Little Steer Run	0.0/Mouth of Little Steer Run
POTOMAC RIVER	271.1/Mouth of Little Steer Run, W. Va.
POTOMAC RIVER	270.4/Mouth of Shambaugh Hollow
Shambaugh Hollow	___/Head of Shambaugh Hollow
Shambaugh Hollow	0.0/Mouth of Shambaugh Hollow
POTOMAC RIVER	270.4/Mouth of Shambaugh Hollow
POTOMAC RIVER	269.8/Mouth of Gross Hollow, W. Va.
Gross Hollow	___/Head of Gross Hollow
Gross Hollow	0.4/Mouth of Sprigs Hollow
Sprigs Hollow	___/Head of Sprigs Hollow
Sprigs Hollow	0.0/Mouth of Sprigs Hollow
Gross Hollow	0.4/Mouth of Sprigs Hollow
Gross Hollow	0.1/Bridge, B & O R.R.
Gross Hollow	0.0/Mouth of Gross Hollow
POTOMAC RIVER	269.8/Mouth of Gross Hollow
POTOMAC RIVER	269.65/Bridge, B & O R.R.
POTOMAC RIVER	269.4/Bridge, Western Md. R.R.
POTOMAC RIVER	268.6/Mouth of Sandy Flat Hollow, Md.
Sandy Flat Hollow	1.1/Head of Sandy Flat Hollow
Sandy Flat Hollow	0.1/Chesapeake & Ohio Canal
Sandy Flat Hollow	0.0/Mouth of Sandy Flat Hollow
POTOMAC RIVER	268.6/Mouth of Sandy Flat Hollow
POTOMAC RIVER	267.8/Mouth of Gross Hollow, Md.
Gross Hollow	___/Head of Gross Hollow
Gross Hollow	0.1/Chesapeake & Ohio Canal
Gross Hollow	0.0/Mouth of Gross Hollow
POTOMAC RIVER	267.8/Mouth of Gross Hollow, Md.
POTOMAC RIVER	265.6/Bridge, Western Md. R.R.

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
POTOMAC RIVER	265.0/Mouth of Hales Hollow, W. Va.
Hales Hollow	0.8/Head of Hales Hollow
Hales Hollow	0.0/Mouth of Hales Hollow
POTOMAC RIVER	265.0/Mouth of Hales Hollow
POTOMAC RIVER	263.8/Mouth of Hansrote Hollow
Hansrote Hollow	____/Head of Hansrote Hollow
Hansrote Hollow	0.2/Bridge, B & O R.R.
Hansrote Hollow	0.1/Bridge, Western Md. R.R.
Hansrote Hollow	0.0/Mouth of Hansrote Hollow
POTOMAC RIVER	263.8/Mouth of Hansrote Hollow
POTOMAC RIVER	263.7/Mouth of Larrys Hollow
Larrys Hollow	____/Head of Larrys Hollow
Larrys Hollow	0.2/Bridge, B & O R.R.
Larrys Hollow	0.1/Bridge, Western Md. R.R.
Larrys Hollow	0.0/Mouth of Larrys Hollow
POTOMAC RIVER	263.7/Mouth of Larrys Hollow
POTOMAC RIVER	262.2/Mouth of Beanpatch Hollow
Beanpatch Hollow	____/Head of Beanpatch Hollow
Beanpatch Hollow	0.0/Mouth of Beanpatch Hollow
POTOMAC RIVER	262.2/Mouth of Beanpatch Hollow
POTOMAC RIVER	261.3/Bridge, Western Md. R.R.
POTOMAC RIVER	261.1/Mouth of Devils Alley, Md.
Devils Alley	____/Head of Devils Alley
Devils Alley	0.0/Mouth of Devils Alley
POTOMAC RIVER	261.1/Mouth of Devils Alley, Md.
POTOMAC RIVER	258.1/Bridge, Western Md. R.R.
POTOMAC RIVER	256.9/Mouth of Macks Hollow, W. Va.
Macks Hollow	____/Head of Macks Hollow
Macks Hollow	0.2/Bridge, B & O R.R.
Macks Hollow	0.1/Bridge, Highway (Gully Road)
Macks Hollow	0.0/Mouth of Macks Hollow
POTOMAC RIVER	256.9/Mouth of Macks Hollow
POTOMAC RIVER	256.4/Mouth of Rockwell Run
Rockwell Run	____/Head of Rockwell Run
Rockwell Run	0.1/Bridge, B & O R.R.
Rockwell Run	0.0/Mouth of Rockwell Run
POTOMAC RIVER	256.4/Mouth of Rockwell Run
POTOMAC RIVER	255.4/Mouth of Fifteen Mile Creek, Md.
Fifteen Mile Creek	____/Head of Fifteen Mile Creek, North of Artemas, Pa.
Fifteen Mile Creek	14.0/State and County Line, Upstream - Bedford Co., Pa. Downstream - Allegany Co., Md.
Fifteen Mile Creek	13.7/Mouth of Line Run
Line Run	1.0/Head of Line Run
Line Run	0.0/Mouth of Line Run
Fifteen Mile Creek	13.7/Mouth of Line Run
Fifteen Mile Creek	13.1/Mouth of Bear Camp Branch, Md.

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Bear Camp Branch	___/Head of Bear Camp Branch, Pa.
Bear Camp Branch	1.4/State and County Line, Upstream - Bedford Co., Pa. Downstream - Allegany Co., Md.
Bear Camp Branch	0.0/Mouth of Bear Camp Branch
Fifteen Mile Creek	13.1/Mouth of Bear Camp Branch
Fifteen Mile Creek	11.5/Mouth of Big Divide Run
Big Divide Run	___/Head of Big Divide Run
Big Divide Run	0.0/Mouth of Big Divide Run
Fifteen Mile Creek	11.5/Mouth of Big Divide Run
Fifteen Mile Creek	10.3/Bridge, U. S. Highway #40
Fifteen Mile Creek	9.0/Mouth of Piclic Run
Piclic Run	___/Head of Piclic Run
Piclic Run	0.0/Mouth of Piclic Run
Fifteen Mile Creek	9.0/Mouth of Piclic Run
Fifteen Mile Creek	8.8/Mouth of White Sulphur Run
White Sulphur Run	___/Head of White Sulphur Run
White Sulphur Run	1.5/Mouth of Black Sulphur Run
Black Sulphur Run	___/Head of Black Sulphur Run
Black Sulphur Run	0.0/Mouth of Black Sulphur Run
White Sulphur Run	1.5/Mouth of Black Sulphur Run
White Sulphur Run	0.0/Mouth of White Sulphur Run
Fifteen Mile Creek	8.8/Mouth of White Sulphur Run
Fifteen Mile Creek	8.3/Mouth of Deep Run
Deep Run	___/Head of Deep Run
Deep Run	0.0/Mouth of Deep Run
Fifteen Mile Creek	8.3/Mouth of Deep Run
Fifteen Mile Creek	6.3/Mouth of Terrapin Run
Terrapin Run	___/Head of Terrapin Run
Terrapin Run	3.1/Bridge, U. S. Highway #40
Terrapin Run	0.0/Mouth of Terrapin Run
Fifteen Mile Creek	6.3/Mouth of Terrapin Run
Fifteen Mile Creek	3.3/Mouth of Mudlick Hollow
Mudlick Hollow	___/Head of Mudlick Hollow
Mudlick Hollow	0.0/Mouth of Mudlick Hollow
Fifteen Mile Creek	3.3/Mouth of Mudlick Hollow
Fifteen Mile Creek	3.1/Mouth of Spring Lick Hollow
Spring Lick Hollow	___/Head of Spring Lick Hollow
Spring Lick Hollow	0.0/Mouth of Spring Lick Hollow
Fifteen Mile Creek	3.1/Mouth of Spring Lick Hollow
Fifteen Mile Creek	2.0/Mouth of Flat Run
Flat Run	___/Head of Flat Run
Flat Run	0.0/Mouth of Flat Run
Fifteen Mile Creek	2.0/Mouth of Flat Run
Fifteen Mile Creek	0.1/Bridge, Western Md. R.R.
Fifteen Mile Creek	0.0/Mouth of Fifteen Mile Creek (D.A. 61.2)
POTOMAC RIVER	255.4/Mouth of Fifteen Mile Creek, Md.

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
POTOMAC RIVER	251.15/County Line, Upstream - Allegany Co., Md. Washington Co., Md.
POTOMAC RIVER	251.15/Mouth of Sideling Hill Creek
Sideling Hill Creek	___/Head of Sideling Hill Creek, Pa.
Sideling Hill Creek	18.8/County Line, Upstream - Bedford Co., Pa. Downstream - Fulton Co., Pa.
Sideling Hill Creek	18.6/Bridge, Pa. Highway #226
Sideling Hill Creek	18.3/Mouth of Crooked Run
Crooked Run	___/Head of Crooked Run
Crooked Run	0.0/Mouth of Crooked Run
Sideling Hill Creek	18.3/Mouth of Crooked Run
Sideling Hill Creek	17.8/Mouth of Trough Run
Trough Run	___/Head of Trough Run
Trough Run	0.1/Bridge, Pa. Highway #226
Trough Run	0.0/Mouth of Trough Run
Sideling Hill Creek	17.8/Mouth of Trough Run
Sideling Hill Creek	15.1/State and County Line, Upstream - Fulton Co., Pa. Downstream - Washington Co., Md.
Sideling Hill Creek	11.8/Bridge, U. S. Highway #40
Sideling Hill Creek	11.7/Mouth of Bear Creek
Bear Creek	___/Head of Bear Creek, Pa.
Bear Creek	2.7/State and County Line, Upstream - Fulton Co., Pa. Downstream - Washington Co., Md.
Bear Creek	0.1/Bridge, U. S. Highway #40
Bear Creek	0.0/Mouth of Bear Creek
Sideling Hill Creek	11.7/Mouth of Bear Creek
Sideling Hill Creek	6.8/Mouth of Swain Hollow
Swain Hollow	___/Head of Swain Hollow
Swain Hollow	0.0/Mouth of Swain Hollow
Sideling Hill Creek	6.8/Mouth of Swain Hollow
Sideling Hill Creek	0.1/Bridge, Western Md. R.R.
Sideling Hill Creek	0.1/Chesapeake & Ohio Canal
Sideling Hill Creek	0.0/Mouth of Sideling Hill Creek (D.A. 103.6)
POTOMAC RIVER	251.15/Mouth of Sideling Hill Creek
POTOMAC RIVER	249.7/Lake Jenkins, Md.
POTOMAC RIVER	249.6/Mouth of Willett Run, W. Va.
Willett Run	___/Head of Willett Run
Willett Run	1.3/Mouth of Rocky Hollow
Rocky Hollow	1.0/Head of Rocky Hollow
Rocky Hollow	0.0/Mouth of Rocky Hollow
Willett Run	1.3/Mouth of Rocky Hollow
Willett Run	0.2/Bridge, B & O R.R.
Willett Run	0.0/Mouth of Willett Run
POTOMAC RIVER	249.6/Mouth of Willett Run
POTOMAC RIVER	248.6/Dam #6, C & O Canal Feeder Dam
POTOMAC RIVER	248.5/Mouth of Long Hollow Run, W. Va.

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Long Hollow Run	___/Head of Long Hollow Run
Long Hollow Run	3.8/Mouth of Wiggins Run
Wiggins Run	___/Head of Wiggins Run
Wiggins Run	0.0/Mouth of Wiggins Run
Long Hollow Run	3.8/Mouth of Wiggins Run
Long Hollow Run	2.5/Bridge, W. Va. Highway #9
Long Hollow Run	0.3/Bridge, W. Va. Highway #9
Long Hollow Run	0.0/Mouth of Long Hollow Run
POTOMAC RIVER	248.5/Mouth of Long Hollow Run
POTOMAC RIVER	248.2/Town of Great Cacapon, Morgan Co., W. Va.
POTOMAC RIVER	247.9/Mouth of Cacapon River
Cacapon River	___/Head of Cacapon River
Cacapon River	6.2/Gaging Station near Great Cacapon, W. Va. (D. A. 667.0)
Cacapon River	2.6/Power Plant
Cacapon River	0.3/Sampling Station maintained by Dept. of Natural Resources, W. Va.
Cacapon River	0.2/Bridge, W. Va. Highway #9
Cacapon River	___/Outfall, Lost River State Park, W. Va.
Cacapon River	0.0/Mouth of Cacapon River (D. A. 681.0)
POTOMAC RIVER	247.9/Mouth of Cacapon River
POTOMAC RIVER	244.4/Mouth of Sir Johns Run
Sir Johns Run	___/Head of Sir Johns Run
Sir Johns Run	0.1/Bridge, B & O R.R.
Sir Johns Run	0.0/Mouth of Sir Johns Run
POTOMAC RIVER	244.4/Mouth of Sir Johns Run
POTOMAC RIVER	240.9/Mouth of Grasshopper Hollow, W. Va.
Grasshopper Hollow	1.2/Head of Grasshopper Hollow
Grasshopper Hollow	0.1/Bridge, B & O R.R.
Grasshopper Hollow	0.0/Mouth of Grasshopper Hollow
POTOMAC RIVER	240.9/Mouth of Grasshopper Hollow
POTOMAC RIVER	239.1/Bridge, U. S. Highway #522
POTOMAC RIVER	238.8/Mouth of Little Tonoloway Creek, Md.
Little Tonoloway Creek	___/Head of Little Tonoloway Creek
Little Tonoloway Creek	5.6/Bridge, Md. Highway #453
Little Tonoloway Creek	4.9/Bridge, Md. Highway #453
Little Tonoloway Creek	4.6/Bridge, U. S. Highway #40
Little Tonoloway Creek	3.8/Mouth of Munson Spring Brook
Munson Spring Brook	___/Head of Munson Spring Brook
Munson Spring Brook	0.0/Mouth of Munson Spring Brook
Little Tonoloway Creek	3.8/Mouth of Munson Spring Brook
Little Tonoloway Creek	3.3/Mouth of Minnow Run
Minnow Run	___/Head of Minnow Run, Pa.
Minnow Run	0.8/State and County Line, Upstream - Fulton Co., Pa. Downstream - Washington Co., Md.
Minnow Run	0.0/Mouth of Minnow Run
Little Tonoloway Creek	3.3/Mouth of Minnow Run
Little Tonoloway Creek	3.2/Gaging Station near Hancock, Md. (D. A. 16.9)

POTOMAC RIVER	DRAINAGE BASIN
North Branch to Monocacy River	SUB-BASIN

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Little Tonoloway Creek	0.4/Bridge, U.S. Highways #522 and 40
Little Tonoloway Creek	0.2/Bridge, Western Md. R.R.
Little Tonoloway Creek	___/Intake, Hancock, Md.
Little Tonoloway Creek	0.0/Mouth of Little Tonoloway Creek (D.A. 25.9)
POTOMAC RIVER	238.8/Mouth of Little Tonoloway Creek
POTOMAC RIVER	238.6/Gaging Station at Hancock, Md. (D.A. 4,073)
POTOMAC RIVER	238.3/Mouth of Dry Run, W.Va.
Dry Run	___/Head of Dry Run
Dry Run	0.6/Mouth of Warm Spring Run
Warm Spring Run	___/Head of Warm Spring Run
Warm Spring Run	7.0/Outfall, Berkeley Springs, W.Va.
Warm Spring Run	4.0/Intake & Outfall, Penn Sand Glass Co.
Warm Spring Run	___/Outfall, Aulabaugh Bros. (seasonal)
Warm Spring Run	0.0/Mouth of Warm Spring Run
Dry Run	0.6/Mouth of Warm Spring Run
Dry Run	0.4/Bridge, B & O R.R.
Dry Run	0.0/Mouth of Dry Run
POTOMAC RIVER	238.3/Mouth of Dry Run
POTOMAC RIVER	237.5/Mouth of Tonoloway Creek
Tonoloway Creek	___/Head of Tonoloway Creek Pa.
Tonoloway Creek	4.2/Mouth of Plum Run, Pa.
Plum Run	___/Head of Plum Run
Plum Run	0.0/Mouth of Plum Run
Tonoloway Creek	4.2/Mouth of Plum Run, Pa.
Tonoloway Creek	3.2/State and County Line, Upstream-FultonCo.,Pa. Downstream-Washington Co., Md.
Tonoloway Creek	0.2/Bridge, U.S. Highway #40
Tonoloway Creek	0.1/Bridge, Western Md. R.R.
Tonoloway Creek	___/Outfall, Hancock, Md.
Tonoloway Creek	0.0/Mouth of Tonoloway Creek (D.A. 113.6)
POTOMAC RIVER	237.5/Mouth of Tonoloway Creek,Md.
POTOMAC RIVER	236.8/Mouth of Stoney Run,W.Va.
Stoney Run	3.0/Head of Stoney Run
Stoney Run	0.2/Bridge, B & O R.R.

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Stoney Run	0.0/Mouth of Stoney Run
POTOMAC RIVER	236.8/Mouth of Stoney Run
POTOMAC RIVER	236.2/Mouth of Ditch Run, Md.
Ditch Run	___/Head of Ditch Run, Pa.
Ditch Run	3.8/State and County Line, Upstream-Fulton Co.,Pa. Downstream-Washington Co., Md.
Ditch Run	0.3/Bridge, U.S. Highway #40
Ditch Run	0.2/Bridge, Western Md. R.R.
Ditch Run	0.0/Mouth of Ditch Run
POTOMAC RIVER	236.2/Mouth of Ditch Run

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
POTOMAC RIVER	233.2/Mouth of Sleepy Creek, W. Va.
Sleepy Creek	___/Head of Sleepy Creek
Sleepy Creek	7.7/Mouth of Meadow Branch
Meadow Branch	___/Head of Meadow Branch
Meadow Branch	0.0/Mouth of Meadow Branch
Sleepy Creek	7.7/Mouth of Meadow Branch
Sleepy Creek	7.6/Bridge, W. Va. Highway #9
Sleepy Creek	6.1/Mouth of Swim Run
Swim Run	___/Head of Swim Run
Swim Run	0.0/Mouth of Swim Run
Sleepy Creek	6.1/Mouth of Swim Run
Sleepy Creek	0.2/Bridge, B & O R.R.
Sleepy Creek	0.0/Mouth of Sleepy Creek (D.A. 142.0)
POTOMAC RIVER	233.2/Mouth of Sleepy Creek, W. Va.
POTOMAC RIVER	231.0/Mouth of Licking Creek, Md.
Licking Creek	___/Head of Licking Creek, Pa.
	12.1/County Line, Upstream - Fulton Co., Pa. Downstream - Franklin Co., Pa.
Licking Creek	___/Gaging Station near Sylvan, Pa.
Licking Creek	10.1/Bridge, Pa. Highway #456
Licking Creek	9.2/State and County Line, Upstream - Franklin Co., Pa. Downstream - Washington Co., Md.
Licking Creek	9.1/Mouth of Little Cove Creek
Little Cove Creek	___/Head of Little Cove Creek, Pa.
Little Cove Creek	0.2/State and County Line, Upstream - Franklin Co., Pa. Downstream - Washington Co., Md.
Little Cove Creek	0.0/Mouth of Little Cove Creek
Licking Creek	9.1/Mouth of Little Cove Creek
Licking Creek	3.7/Mouth of Rattle Run
Rattle Run	___/Head of Rattle Run
Rattle Run	0.0/Mouth of Rattle Run
Licking Creek	3.7/Mouth of Rattle Run
Licking Creek	1.3/Mouth of Lanes Run
Lanes Run	___/Head of Lanes Run
Lanes Run	2.9/Mouth of Indian Springs Run
Indian Springs Run	___/Head of Indian Springs Run
Indian Springs Run	0.0/Mouth of Indian Springs Run
Lanes Run	2.9/Mouth of Indian Springs Run
Lanes Run	0.0/Mouth of Lanes Run
Licking Creek	1.3/Mouth of Lanes Run
Licking Creek	0.5/Bridge, U. S. Highway #40
Licking Creek	0.3/Bridge, Western Md. R.R.
Licking Creek	0.2/Bridge, Chesapeake & Ohio Canal
Licking Creek	0.0/Mouth of Licking Creek (D.A. 213.1)
POTOMAC RIVER	231.0/Mouth of Licking Creek

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
POTOMAC RIVER	230.2/Mouth of Big Run, W. Va.
Big Run	____/Head of Big Run
Big Run	0.0/Mouth of Big Run
POTOMAC RIVER	230.2/Mouth of Big Run, W. Va.
POTOMAC RIVER	228.75/Bridge, Western Md. R.R.
POTOMAC RIVER	228.2/Mouth of Cherry Run, W. Va.
Cherry Run	____/Head of Cherry Run
Cherry Run	3.6/Bridge, W. Va. Highway #9
Cherry Run	0.3/Bridge, B & O R.R.
Cherry Run	0.0/Mouth of Cherry Run
POTOMAC RIVER	228.2/Mouth of Cherry Run
POTOMAC RIVER	225.9/Mouth of Back Creek, W. Va.
Back Creek	____/Head of Back Creek
Back Creek	27.0/Central Church, W. Va.
Back Creek	17.9/Slains Ford
Back Creek	13.2/Gaging Station near Tomahawk, Berkeley Co., W. Va.
Back Creek	8.3/Gaging Station, near Jones Springs (D. A. 243.0)
Back Creek	____/Outfall, Jones Springs, W. Va.
Back Creek	8.25/Bridge, W. Va. Highway #9
Back Creek	5.0/Hedgesville Dam Site
Back Creek	4.0/Outfall, Hedgesville, W. Va.
Back Creek	1.8/Bridge, B & O R.R.
Back Creek	0.1/Bridge, B & O R.R.
Back Creek	0.0/Mouth of Back Creek (D. A. 274.0)
POTOMAC RIVER	225.9/Mouth of Back Creek
POTOMAC RIVER	224.5/Mouth of Green Spring Run, Md.
Green Spring Run	____/Head of Green Spring Run
Green Spring Run	1.2/Bridge, Md. Highway #56
Green Spring Run	0.2/Bridge, Western Md. R.R.
Green Spring Run	0.1/Bridge, Chesapeake & Ohio Canal
Green Spring Run	0.0/Mouth of Green Spring Run
POTOMAC RIVER	224.5/Mouth of Green Spring Run
POTOMAC RIVER	221.9/Mouth of Harland Run, W. Va.
Harland Run	____/Head of Harland Run
Harland Run	0.0/Mouth of Harland Run
POTOMAC RIVER	221.9/Mouth of Harland Run
POTOMAC RIVER	218.8/Mouth of Camp Spring Run, Md.
Camp Spring Run	____/Head of Camp Spring Run
Camp Spring Run	0.7/Bridge, Western Md. R.R.
Camp Spring Run	0.05/Bridge, Chesapeake & Ohio Canal
Camp Spring Run	0.0/Mouth of Camp Spring Run
POTOMAC RIVER	218.8/Mouth of Camp Spring Run
POTOMAC RIVER	217.4/Potomac-Edison Dam (formerly C & O Canal Feeder Dam #5)
POTOMAC RIVER	216.6/Mouth of Little Conococheague Creek, Md.
Little Conococheague Creek	____/Head of Little Conococheague Creek, Pa.

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Little Conococheague Creek	11.2/State and County Line, Upstream - Franklin Co., Pa. Downstream - Washington Co., Md.
Little Conococheague Creek	5.7/Bridge, U. S. Highway #40
Little Conococheague Creek	3.9/Bridge, Md. Highway #68
Little Conococheague Creek	3.3/Bridge, Western Md. R.R.
Little Conococheague Creek	1.4/Mouth of Toms Run
Toms Run	____/Head of Toms Run
Toms Run	3.2/Bridge, U. S. Highway #40
Toms Run	3.2/Town of Clear Spring, Md.
Toms Run	1.1/Bridge, Western Md. R.R.
Toms Run	0.0/Mouth of Toms Run
Little Conococheague Creek	1.4/Mouth of Toms Run
Little Conococheague Creek	0.0/Mouth of Little Conococheague Creek (D. A. 18.0)
POTOMAC RIVER	216.6/Mouth of Little Conococheague Creek
POTOMAC RIVER	212.7/Mouth of Jordan Run, W. Va.
Jordan Run	2.0/Head of Jordan Run
Jordan Run	0.0/Mouth of Jordan Run
POTOMAC RIVER	212.7/Mouth of Jordan Run, W. Va.
POTOMAC RIVER	212.5/Sampling Station maintained by Hagerstown Water Dept. above Williamsport, Md.
POTOMAC RIVER	212.0/Intake, Hagerstown Filter Plant
POTOMAC RIVER	211.0/Outfall, Williamsport, Md.
POTOMAC RIVER	211.0/Sampling Station maintained by W. D. Byron & Sons, Williamsport, Md.
POTOMAC RIVER	210.7/Mouth of Conococheague Creek
Conococheague Creek	____/Head of Conococheague Creek, Pa.
Conococheague Creek	____/Gaging Station at Caledonia, Pa. (D. A. 5.05)
Conococheague Creek	____/Mouth of Hosack Run
Hosack Run	____/Head of Hosack Run
Hosack Run	____/Gaging Station near Caledonia, Pa. (D. A. 2.87)
Hosack Run	0.0/Mouth of Hosack Run
Conococheague Creek	____/Mouth of Hosack Run
Conococheague Creek	____/Outfall, Scotland Orphanage, Pa.
Conococheague Creek	53.0/Intake & Outfall, Chambersburg, Pa.
Conococheague Creek	53.0/Outfall, H. J. Heinz Co., Chambersburg
Conococheague Creek	____/Intake & Outfall, Mercersburg, Pa.
Conococheague Creek	____/Intake & Outfall, Lowengart Tanning Co., Mercersburg, Pa.
Conococheague Creek	32.0/Outfall, Greencastle, Pa.
Conococheague Creek	____/Outfall, Greencastle Packing Co.
Conococheague Creek	____/Outfall, S. G. Dixon TB Hospital
Conococheague Creek	____/Outfall, Path Valley Esso
Conococheague Creek	21.2/State and County Line, Upstream - Franklin Co., Pa. Downstream - Washington Co., Md.

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Conococheague Creek	20.7/Bridge, Md. Highway #58
Conococheague Creek	18.7/Gaging Station
Conococheague Creek	18.0/Bridge, Md. Highway #494
Conococheague Creek	18.0/Gaging Station at Fairview, Md. (D. A. 494.0)
Conococheague Creek	17.0/Mouth of Rockdale Run
Rockdale Run	___/Head of Rockdale Run
Rockdale Run	0.0/Mouth of Rockdale Run
Conococheague Creek	17.0/Mouth of Rockdale Run
Conococheague Creek	16.8/Mouth of Toms Run
Toms Run	/Head of Toms Run, Pa.
Toms Run	2.2/Bridge, Md. Highway #58
Toms Run	0.0/Mouth of Toms Run
Conococheague Creek	16.8/Mouth of Toms Run
Conococheague Creek	15.5/Bridge, Bradfording Road
Conococheague Creek	12.7/Mouth of Rush Run
Rush Run	___/Head of Rush Run
Rush Run	2.4/Bridge, Md. Highway #398
Rush Run	2.3/Mouth of Troupe Run
Troupe Run	___/Head of Troupe Run
Troupe Run	2.4/Bridge, Md. Highway #58
Troupe Run	0.3/Bridge, Md. Highway #398
Troupe Run	0.0/Mouth of Troupe Run
Rush Run	2.3/Mouth of Troupe Run
Rush Run	0.0/Mouth of Rush Run
Conococheague Creek	12.7/Mouth of Rush Run
Conococheague Creek	8.7/Bridge, Wilson, Md.
Conococheague Creek	8.6/Bridge, U. S. Highway #40 at Conococheague
Conococheague Creek	4.7/Mouth of Meadow Brook
Meadow Brook	___/Head of Meadow Brook
Meadow Brook	0.0/Mouth of Meadow Brook
Conococheague Creek	4.7/Mouth of Meadow Brook
Conococheague Creek	4.7/Conococheague Dam Site
Conococheague Creek	3.3/Dam, Millington Mills
Conococheague Creek	0.7/Bridge, W. Md. R.R.
Conococheague Creek	___/Outfall, Kemp Mills, Md.
Conococheague Creek	___/Intake & Outfall, W. D. Byron & Sons
Conococheague Creek	___/Outfall, Williamsport, Md.
Conococheague Creek	0.3/Bridge, Highway #68 at Williamsport
Conococheague Creek	0.3/Sampling Station, W. D. Byron & Sons near Williamsport, Md.
Conococheague Creek	0.25/C & O Canal Aqueduct
Conococheague Creek	0.0/Mouth of Conococheague Creek (D.A. 563.4)
POTOMAC RIVER	210.7/Mouth of Conococheague Creek
POTOMAC RIVER	210.7/Bridge, Toll, U. S. #11
POTOMAC RIVER	210.7/Intake & Outfall, Potomac Edison Co., Williamsport, Md.

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
POTOMAC RIVER	210.56/Dam, Power Plant, Potomac Edison
POTOMAC RIVER	210.0/Sampling Station, Hagerstown Water Dept. Below Williamsport, Md.
POTOMAC RIVER	208.6/Bridge, Pa. R.R.
POTOMAC RIVER	206.8/Mouth of Magruder Run, W. Va.
Magruder Run	1.8/Head of Magruder Run
Magruder Run	0.5/Bridge, Pa. R.R.
Magruder Run	0.0/Mouth of Magruder Run
POTOMAC RIVER	206.8/Mouth of Magruder Run
POTOMAC RIVER	205.4/Intake & Outfall, DuPont, Falling Water, W. Va.
POTOMAC RIVER	202.0/Mouth of Opequon Creek, W. Va.
Opequon Creek	___/Head of Opequon Creek
Opequon Creek	8.3/Sampling Station - Dept. Natural Resources, W. Va.
Opequon Creek	5.0/Gaging Station near Martinsburg, W. Va. (D. A. 272.0)
Opequon Creek	___/Mouth of Tuscarora Creek
Tuscarora Creek	___/Head of Tuscarora Creek
Tuscarora Creek	___/Gaging Station above Martinsburg, W. Va. (D. A. 11.3)
Tuscarora Creek	0.0/Mouth of Tuscarora Creek
Opequon Creek	___/Mouth of Tuscarora Creek
Opequon Creek	3.3/Bridge, Myers Bridge
Opequon Creek	2.1/Bridge, Lights Ford
Opequon Creek	1.8/Mouth of Hoke Run
Hoke Run	___/Head of Hoke Run
Hoke Run	2.4/Bridge, U. S. #11
Hoke Run	1.7/Watercress Ponds
Hoke Run	1.6/Bridge, Pa. R.R.
Hoke Run	0.5/Sulphur Springs
Hoke Run	0.0/Mouth of Hoke Run
Opequon Creek	1.8/Mouth of Hoke Run
Opequon Creek	0.0/Mouth of Opequon Creek (D. A. 340.0)
POTOMAC RIVER	202.0/Mouth of Opequon Creek
POTOMAC RIVER	199.0/Mouth of Downey Branch, Md.
Downey Branch	___/Head of Downey Branch
Downey Branch	2.1/Bridge, Md. Highway #63
Downey Branch	0.0/Mouth of Downey Branch
POTOMAC RIVER	199.0/Mouth of Downey Branch
POTOMAC RIVER	195.3/Potomac Edison Dam, formerly C & O Canal Feeder Dam #4
POTOMAC RIVER	195.1/Mouth of Rockymarsh Run, W. Va.
Rockymarsh Run	___/Head of Rockymarsh Run
Rockymarsh Run	4.1/Bridge, W. Va. Highway #45
Rockymarsh Run	0.0/Mouth of Rockymarsh Run
POTOMAC RIVER	195.1/Mouth of Rockymarsh Run

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
POTOMAC RIVER	192.4/Mouth of Marsh Run, Md.
Marsh Run	/Head of Marsh Run
Marsh Run	3.2/Mouth of St. James Run
St. James Run	/Head of St. James Run
St. James Run	2.2/Bridge, Md. Highway #68
St. James Run	1.4/Bridge, Norfolk and Western R.R.
St. James Run	0.1/Bridge, Md. Highway #63
St. James Run	0.0/Mouth of St. James Run
Marsh Run	3.2/Mouth of St. James Run
Marsh Run	3.1/Bridge, Norfolk and Western R.R.
Marsh Run	0.0/Mouth of Marsh Run (D. A. 20.2)
POTOMAC RIVER	192.4/Mouth of Marsh Run
POTOMAC RIVER	187.6/Outfall, Sharpsburg, Md.
POTOMAC RIVER	183.67/Bridge, Md. Highway #34 (James Ramsey Br.)
POTOMAC RIVER	183.6/Sampling Station maintained by Dept. Natural Resources, W. Va.
POTOMAC RIVER	183.3/Bridge, Norfolk and Western R.R.
POTOMAC RIVER	183.0/Gaging Station at Shepherdstown, W. Va. (D. A. 5,936.0)
POTOMAC RIVER	183.0/Intake & Outfall, Shepherdstown, W. Va.
POTOMAC RIVER	183.0/Outfall, Mere Sand & Gravel Co.
POTOMAC RIVER	181.4/Blackfords Ford
POTOMAC RIVER	180.6/Upstream point of Knott Island
POTOMAC RIVER	/Downstream point of Knott Island
POTOMAC RIVER	180.4/Mouth of Rattlesnake Run, W. Va.
Rattlesnake Run	/Head of Rattlesnake Run
Rattlesnake Run	5.0/Bridge, Flowing Springs Road
Rattlesnake Run	0.0/Mouth of Rattlesnake Run
POTOMAC RIVER	180.4/Mouth of Rattlesnake Run
POTOMAC RIVER	180.2/Mouth of Antietam Creek, Md.
Antietam Creek	/Head of Antietam Creek, Pa.
Antietam Creek	37.3/Mouth of East Branch Antietam Creek, Pa.
East Branch	/Head of East Branch
East Branch	4.2/Bridge, Pa. Highway #16
East Branch	3.3/Mouth of Red Run, Pa.
Red Run	/Head of Red Run
Red Run	6.4/Bridge, Pa. Highway #16
Red Run	5.9/Mouth of Devils Run
Devils Run	/Head of Devils Run
Devils Run	0.0/Mouth of Devils Run
Red Run	5.9/Mouth of Devils Run
Red Run	5.7/Bridge, Pa. Highway #16
Red Run	5.5/Mouth of Mackey Run
Mackey Run	/Head of Mackey Run
Mackey Run	0.0/Mouth of Mackey Run
Red Run	5.5/Mouth of Mackey Run
Red Run	4.4/Dam
Red Run	3.4/Bridge, Pa. Highway #16
Red Run	2.3/Bridge, Pa. Highway #16

POTOMAC RIVER — DRAINAGE BASIN

North Branch to Monocacy River — SUB-BASIN

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS AT SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Red Run	1.7/Mouth of Falls Creek, Pa.
Falls Creek	5.0/Head of Falls Creek
Falls Creek	4.9/State and County Line, Upstream-Adams Co., Pa. Downstream-Frederick Co., Md.
Falls Creek	3.9/Mouth of Lake Royer Outlet
Lake Royer Outlet	___/Head of Lake Royer Outlet
Lake Royer Outlet	___/Intake, Fort Ritchie
Lake Royer Outlet	___/Lake Royer dam
Lake Royer Outlet	0.0/Mouth of Lake Royer Outlet
Falls Creek	3.9/Mouth of Lake Royer Outlet
Falls Creek	___/Outfall, Fort Ritchie
Falls Creek	3.3/State & County Line, Upstream-Frederick Co., Md. Downstream-Adams Co., Pa.
Falls Creek	0.0/Mouth of Falls Creek
Red Run	1.7/Mouth of Falls Creek
Red Run	0.0/Mouth of Red Run
East Branch	3.3/Mouth of Red Run
East Branch	0.1/Bridge, Pa. Highway 491
East Branch	0.0/Mouth of East Branch
Antietam Creek	37.3/Mouth of East Branch, Pa.
Antietam Creek	37.0/State Line, Upstream-Pa. Downstream-Md.
Antietam Creek	35.1/Bridge, Secondary Rd., Md.
Antietam Creek	34.2/Dam
Antietam Creek	34.1/Bridge, Md. Highway 77
Antietam Creek	32.7/Bridge, Md. Highway 60
Antietam Creek	___/Outfall, Smithsburg, Md.
Antietam Creek	32.2/Mouth of Little Antietam Creek
Little Antietam Creek	10.2/Head of Little Antietam Creek

POTOMAC RIVER — DRAINAGE BASIN
North Branch to Monocacy River — SUB-BASIN

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Little Antietam Creek	8.6/Edgemont Reservoir
Little Antietam Creek	8.2/Bridge, Md. Highway #92
Little Antietam Creek	6.6/Bridge, Md. Highway #64
Little Antietam Creek	3.3/Mouth of Grove Creek
Grove Creek	___/Head of Grove Creek
Grove Creek	2.4/Bridge, Md. Highway #17
Grove Creek	0.0/Mouth of Grove Creek
Little Antietam Creek	3.3/Mouth of Grove Creek
Little Antietam Creek	0.0/Mouth of Little Antietam Creek
Antietam Creek	32.2/Mouth of Little Antietam Creek
Antietam Creek	31.5/Bridge, Secondary Road
Antietam Creek	30.1/Bridge, Old Forge Road
Antietam Creek	28.1/Dam
Antietam Creek	27.0/Intake, Marquet Cement Manufacturing Co.
Antietam Creek	26.9/Outfall, Marquet Cement Manufacturing Co.
Antietam Creek	26.9/Intake & Outfall, Potomac Edison Co., Security, Md.
Antietam Creek	26.4/Intake & Outfall , Nuhope Products Co.
Antietam Creek	26.4/Mouth of Marsh Run
Marsh Run	___/Head of Marsh Run
Marsh Run	6.0/State & County Line, Upstream-Franklin Co., Pa., Downstream-Washington Co., Md.
Marsh Run	3.3/Mouth of West Branch, Marsh Run
West Branch	___/Head of West Branch
West Branch	3.3/State & County Line Upstream-Franklin Co., Pa., Downstream-Washington Co., Md.
West Branch	___/Outfall, Fauchild Stratos Corp.
West Branch	___/Mouth of Walter Martin Spring
Walter Martin Spring	___/Head of Walter Martin Spring
Walter Martin Spring	___/Gaging Station near Hagerstown, Md.
Walter Martin Spring	0.0/Mouth of Walter Martin Spring

POTOMAC RIVER — DRAINAGE BASIN

North Branch to Monocacy River — SUB-BASIN

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Marsh Run	3.3/Mouth of West Branch, Marsh Run
Marsh Run	2.4/Bridge, Md. Highway #60
Marsh Run	0.6/Bridge, Old Forge Road
Marsh Run	0.1/Bridge, Western Md. R.R.
Marsh Run	0.0/Mouth of Marsh Run (D.A. 31.2)
Antietam Creek	26.4/Mouth of Marsh Run
Antietam Creek	26.4/Dam
Antietam Creek	25.7/Bridge, Md. Highway #64
Antietam Creek	24.3/Bridge, U.S. Highway #40
Antietam Creek	23.85/Bridge, Secondary Road at Hagerstown
Antietam Creek	23.8/Intake & Outfall, Municipal Electric Light Co.
Antietam Creek	23.7/Mouth of Unnamed tributary
Unnamed tributary	___/Head of Unnamed tributary
Unnamed tributary	___/Outfall, Western Md. R.R.
Unnamed tributary	___/Outfall, Potomac Creamery
Unnamed tributary	0.0/Mouth of Unnamed tributary
Antietam Creek	23.7/Mouth of Unnamed tributary
Antietam Creek	____/Sampling Station above Hagerstown STP
Antietam Creek	22.6/Outfall, Hagerstown, Md.
Antietam Creek	21.6/Bridge, U.S. Highway #40 Alt.
Antietam Creek	21.4/Outfall Funkstown, Md.
Antietam Creek	17.0/Sampling Station near Hagerstown
Antietam Creek	16.4/Mouth of Lands Spring Branch
Lands Spring Branch	___/Head of Lands Spring Branch
Lands Spring Branch	1.9/Bridge, U.S. Highway #40
Lands Spring Branch	0.05/Bridge, U.S. Highway #40 Alt.
Lands Spring Branch	0.0/Mouth of Lands Spring Branch
Antietam Creek	16.4/Mouth of Lands Spring Branch
Antietam Creek	14.4/Intake & Outfall, Roxbury Distillery
Antietam Creek	14.4/Dam, Roxbury Distillery
Antietam Creek	14.3/Bridge, Secondary Road at Roxbury, Md.
Antietam Creek	12.5/Dam, Antietam Light & Power Co.
Antietam Creek	____/Outfall, Md. State Penitentiary

POTOMAC RIVER — DRAINAGE BASIN
North Branch to Monocacy River — SUB-BASIN

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Antietam Creek	12.4/Outfall, Md. State Reformatory
Antietam Creek	12.4/Bridge, Md. Highway #68
Antietam Creek	12.1/Mouth of Beaver Creek
Beaver Creek	____/Head of Beaver Creek
Beaver Creek	15.5/Bridge, Md. Highway #17
Beaver Creek	14.9/Hagerstown Reservoir
Beaver Creek	14.3/Bridge, Md. Highway #66
Beaver Creek	14.0/Bridge, Md. Highway #64
Beaver Creek	12.4/Bridge, Md. Highway #66
Beaver Creek	11.2/Bridge, Md. Highway #66
Beaver Creek	10.6/Mouth of Mt. Aetna Creek
Mt. Aetna Creek	___/Head of Mt. Aetna Creek
Mt. Aetna Creek	0.0/Mouth of Mt. Aetna Creek
Beaver Creek	10.6/Mouth of Mt. Aetna Creek
Beaver Creek	8.8/Trout Hatchery
Beaver Creek	8.3/Mouth of Black Rock Creek
Black Rock Creek	___/Head of Black Rock Creek
Black Rock Creek	1.0/Mouth of Sue Rudy Run
Sue Rudy Run	___/Head of Sue Rudy Run
Sue Rudy Run	0.0/Mouth of Sue Rudy Run
Black Rock Creek	1.0/Mouth of Sue Rudy Run
Black Rock Creek	0.1/Bridge, Md. Highway #66
Black Rock Creek	0.0/Mouth of Black Rock Creek
Beaver Creek	8.3/Mouth of Black Rock Creek
Beaver Creek	7.0/Doubs Mill
Beaver Creek	6.9/Bridge, U.S. Highway #40
Beaver Creek	3.6/Bridge, U.S. Highway #40 Alt.
Beaver Creek	3.1/Mouth of Little Beaver Creek
Little Beaver Creek	___/Head of Little Beaver Creek
Little Beaver Creek	2.2/Bridge, Md. Highway #66
Little Beaver Creek	0.2/Bridge, U.S. Alt. Highway #40
Little Beaver Creek	0.0/Mouth of Little Beaver Creek
Beaver Creek	3.1/Mouth of Little Beaver Creek

POTOMAC RIVER — DRAINAGE BASIN

North Branch to Monocacy River — SUB-BASIN

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Beaver Creek	0.05/Bridge, Md. Highway #68
Beaver Creek	0.0/Mouth of Beaver Creek (D.A. 33.5)
Antietam Creek	12.1/Mouth of Beaver Creek
Antietam Creek	10.2/Bridge, Monroe Road
Antietam Creek	8.9/Bridge, B & O R.R.
Antietam Creek	7.7/Hicks Bridge
Antietam Creek	7.4/Mouth of Little Antietam Creek near Keedysville, Md.
Little Antietam Creek	8.2/Head of Little Antietam Creek
Little Antietam Creek	7.0/Bridge, Md. Highway #67
Little Antietam Creek	2.8/Mouth of Dog Creek
Dog Creek	___/Head of Dog Creek
Dog Creek	0.0/Mouth of Dog Creek
Little Antietam Creek	2.8/Mouth of Dog Creek
Little Antietam Creek	1.8/Mouth of Unnamed tributary
Unnamed tributary	5.4/Head of Unnamed tributary
Unnamed tributary	5.4/Boonsboro Reservoir
Unnamed tributary	___/Outfall, Boonsboro
Unnamed tributary	4.2/Highway, U.S. #40 Alt.
Unnamed tributary	3.0/Highway, Md. #34
Unnamed tributary	2.0/Highway, Md. #34
Unnamed tributary	0.0/Mouth of Unnamed tributary
Little Antietam Creek	1.8/Mouth of Unnamed tributary
Little Antietam Creek	1.0/Outfall, Keedysville, Md.
Little Antietam Creek	0.3/Dam
Little Antietam Creek	0.0/Mouth of Little Antietam Creek
Antietam Creek	7.4/Mouth of Little Antietam Creek
Antietam Creek	5.4/Bridge, Porterstown Bridge
Antietam Creek	4.4/Bridge, Burnside Highway Bridge
Antietam Creek	4.4/Gaging station near Sharpsburg
Antietam Creek	___/Outfall, Sharpsburg
Antietam Creek	1.7/Mouth of Sharmans Branch
Sharmans Branch	___/Head of Sharmans Branch
Sharmans Branch	0.0/Mouth of Sharmans Branch
Antietam Creek	1.7/Mouth of Sharmans Branch
Antietam Creek	0.2/Bridge, Harpers Ferry Road

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Antietam Creek	0.05/Chesapeake & Ohio Canal
Antietam Creek	0.0/Mouth of Antietam Creek (D.A. 292.0)
POTOMAC RIVER	180.2/Mouth of Antietam Creek
POTOMAC RIVER	173.3/Mouth of Elk Run, W. Va.
Elks Run	___/Head of Elks Run near Shenandoah, W. Va.
Elks Run	1.1/Mouth of Elks Branch, W. Va.
Elks Branch	___/Head of Elks Branch
Elks Branch	0.0/Mouth of Elks Branch
Elks Run	1.1/Mouth of Elks Branch
Elks Run	0.1/Bridge, B & O R.R.
Elks Run	0.0/Mouth of Elks Run
POTOMAC RIVER	173.3/Mouth of Elks Run
POTOMAC RIVER	172.95/C & O Canal Feeder Dam #3
POTOMAC RIVER	172.6/Upstream end of Byrnes Island
POTOMAC RIVER	171.8/Downstream end of Byrnes Island
POTOMAC RIVER	171.7/Intake, Potomac Edison Electric Light
POTOMAC RIVER	171.6/Bridge, B & O R.R.
POTOMAC RIVER	171.5/Mouth of Shenandoah River, W. Va.
Shenandoah River	___/Head of Shenandoah River
Shenandoah River	7.4/Sampling Station, Dept. of Natural Resources, W. Va.
Shenandoah River	4.7/Gaging Station, 33 miles east of Charlestown, W. Va.
Shenandoah River	4.3/Pumping Station
Shenandoah River	4.0/Mouth of Flowing Spring Run
Flowing Spring Run	___/Head of Flowing Spring Run
Flowing Spring Run	2.3/Bridge, U.S. Highway #340
Flowing Spring Run	2.25/Bridge, B & O R.R.
Flowing Spring Run	0.0/Mouth of Flowing Spring Run
Shenandoah River	4.0/Mouth of Flowing Spring Run
Shenandoah River	1.5/Dam
Shenandoah River	0.8/Bridge, U.S. Highway #340
Shenandoah River	0.0/Mouth of Shenandoah River (D.A. 3,053.7)
POTOMAC RIVER	171.5/Mouth of Shenandoah River
POTOMAC RIVER	171.5/Outfall, Harpers Ferry W. Va.
POTOMAC RIVER	171.1/State and County Line, Upstream Jefferson Co., W. Va., Downstream-Loudoun Do., Va.

POTOMAC RIVER	DRAINAGE BASIN
North Branch to Monocacy River	SUB-BASIN

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
POTOMAC RIVER	170.9/Mouth of Piney Run, Va.
Piney Run	___/Head of Piney Run
Piney Run	0.1/Bridge, U.S. Highway #340
Piney Run	0.0/Mouth of Piney Run
POTOMAC RIVER	170.9/Mouth of Piney Run
POTOMAC RIVER	170.5/Bridge, U.S. Highway #340
POTOMAC RIVER	169.0/Mouth of Israel Creek, Md.
Israel Creek	___/Head of Israel Creek
Israel Creek	4.0/Bridge, Kaetzel Road
Israel Creek	0.2/Bridge, U.S. Highway #340
Israel Creek	0.0/Mouth of Israel Creek (D.A. 13.1)
POTOMAC RIVER	169.0/Mouth of Israel Creek
POTOMAC RIVER	168.7/State and County Line, Upstream, Washington Co., Md. & Loudoun Co., Va. Downstream, Frederick Co., Md. & Loudoun Co., Va.
POTOMAC RIVER	166.3/Mouth of Dutchman Creek, Va.
Dutchman Creek	___/Head of Dutchman Creek
Dutchman Creek	0.0/Mouth of Dutchman Creek
POTOMAC RIVER	166.3/Mouth of Dutchman Creek
POTOMAC RIVER	165.8/Bridge, Md. Highway #17, Brunswick, Md.
POTOMAC RIVER	165.5/Intake, B & O R.R., Brunswick
POTOMAC RIVER	165.3/Outfall, B & O R.R., Brunswick
POTOMAC RIVER	165.2/Outfall, Brunswick

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
POTOMAC RIVER	164.5/Mouth of Quarter Branch, Va.
Quarter Branch	___/Head of Quarter Branch
Quarter Branch	0.0/Mouth of Quarter Branch
POTOMAC RIVER	164.5/Mouth of Quarter Branch
POTOMAC RIVER	163.4/Mouth of Little Catoctin Creek, Md.
Little Catoctin Creek	___/Head of Little Catoctin Creek
Little Catoctin Creek	6.9/Bridge, Kepler Road
Little Catoctin Creek	5.9/Bridge, U. S. Highway #340
Little Catoctin Creek	4.6/Bridge, Md. Highway #79
Little Catoctin Creek	2.3/Bridge, Md. Highway #464
Little Catoctin Creek	0.2/Bridge, B & O R.R.
Little Catoctin Creek	0.0/Mouth of Little Catoctin Creek (D.A. 13.0
POTOMAC RIVER	163.4/Mouth of Little Catoctin Creek, Md.
POTOMAC RIVER	162.4/Mouth of Catoctin Creek, Md.
Catoctin Creek	28.2/Head of Catoctin Creek
Catoctin Creek	28.2/Mouth of Middle Creek
Middle Creek	___/Head of Middle Creek
Middle Creek	5.5/Mouth of Dry Run
Dry Run	___/Head of Dry Run
Dry Run	0.2/Bridge, Smithsburg Road
Dry Run	0.0/Mouth of Dry Run
Middle Creek	5.5/Mouth of Dry Run
Middle Creek	5.2/Bridge, Stottlemyer Road
Middle Creek	4.0/Mouth of Spruce Run
Spruce Run	___/Head of Spruce Run
Spruce Run	0.0/Mouth of Spruce Run
Middle Creek	4.0/Mouth of Spruce Run
Middle Creek	3.9/Bridge, Md. Highway #17
Middle Creek	2.0/Bridge, Md. Highway #17
Middle Creek	0.0/Mouth of Middle Creek
Catoctin Creek	28.2/Mouth of Middle Creek
Catoctin Creek	28.2/Mouth of West Branch
West Branch	1.8/Head of West Branch
West Branch	0.0/Mouth of West Branch
Catoctin Creek	28.2/Mouth of West Branch
Catoctin Creek	26.4/Bridge, U. S. Highway #40
Catoctin Creek	26.1/Mouth of Little Catoctin Creek
Little Catoctin Creek	___/Head of Little Catoctin Creek
Little Catoctin Creek	0.4/Bridge, U. S. Highway #40
Little Catoctin Creek	0.0/Mouth of Little Catoctin Creek
Catoctin Creek	26.1/Mouth of Little Catoctin Creek
Catoctin Creek	25.0/Outfall, Myersville, Md.
Catoctin Creek	22.8/Bridge, Old Hagerstown Road
Catoctin Creek	22.3/Mouth of Grindstone Run
Grindstone Run	___/Head of Grindstone Run
Grindstone Run	0.3/Bridge, Mill Summers Road
Grindstone Run	0.0/Mouth of Grindstone Run
Catoctin Creek	22.3/Mouth of Grindstone Run

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Catoctin Creek	19.5/Mouth of Frostown Branch
Frostown Branch	___/Head of Frostown Branch
Frostown Branch	0.0/Mouth of Frostown Branch
Catoctin Creek	19.5/Mouth of Frostown Branch
Catoctin Creek	17.0/Mouth of Little Catoctin Creek
Little Catoctin Creek	___/Head of Little Catoctin Creek
Little Catoctin Creek	3.0/Gaging Station, Harmony, Md. (D. A. 8.9)
Little Catoctin Creek	0.0/Mouth of Little Catoctin Creek
Catoctin Creek	17.0/Mouth of Little Catoctin Creek
Catoctin Creek	16.9/Bridge, U. S. Highway Alt. #40
Catoctin Creek	___/Outfall, Middletown, Md.
Catoctin Creek	15.7/Bridge, Bidle Road
Catoctin Creek	14.8/Gaging Station, Middletown, Md. (D. A. 66.9)
Catoctin Creek	13.6/Mouth of Middle Creek
Middle Creek	___/Head of Middle Creek
Middle Creek	1.8/Bridge, Bidle Road
Middle Creek	1.1/Bridge, Picnic Woods Road
Middle Creek	0.0/Mouth of Middle Creek
Catoctin Creek	13.6/Mouth of Middle Creek
Catoctin Creek	12.5/Mouth of Cone Branch
Cone Branch	___/Head of Cone Branch near Middletown
Cone Branch	3.6/Bridge, U. S. Highway Alt. #40
Cone Branch	3.1/Bridge, Md. Highway #59
Cone Branch	2.4/Mouth of Hollow Road Creek
Hollow Road Creek	___/Head of Hollow Road Creek
Hollow Road Creek	3.9/Bridge, U. S. Highway #40
Hollow Road Creek	1.8/Bridge, U. S. Highway Alt. #40
Hollow Road Creek	1.0/Bridge, Md. Highway #59
Hollow Road Creek	0.0/Mouth of Hollow Road Creek
Cone Branch	2.4/Mouth of Hollow Road Creek
Cone Branch	0.0/Mouth of Cone Branch
Catoctin Creek	12.5/Mouth of Cone Branch
Catoctin Creek	10.7/Bridge, Rudy Road
Catoctin Creek	6.7/Bridge, Md. Highway #383
Catoctin Creek	___/Gaging Station near Jefferson, Md. (D. A. 111.0)
Catoctin Creek	5.8/Mouth of Broad Run
Broad Run	___/Head of Broad Run
Broad Run	6.0/Bridge, Picnic Woods Road
Broad Run	2.8/Bridge, Huffer Road
Broad Run	1.3/Bridge, St. Marks Road
Broad Run	0.0/Mouth of Broad Run
Catoctin Creek	5.8/Mouth of Broad Run
Catoctin Creek	5.2/Bridge, Md. Highway #340
Catoctin Creek	3.1/Bridge, Md. Highway #464
Catoctin Creek	1.3/Bridge, Boss Arnold Road
Catoctin Creek	0.3/Bridge, B & O R.R.
Catoctin Creek	0.0/Mouth of Catoctin Creek (D.A. 120.6)
POTOMAC RIVER	162.4/Mouth of Catoctin Creek, Md.

ADDENDUM APPENDIX A

North Branch to Monocacy River SUB-BASIN

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Page 21	
Catoctin Creek(Md.)	15.4/Outfall, Middletown, Md.
Catoctin Creek	
Broad Run	___/Intake, Myersville

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
POTOMAC RIVER	160.3/Upstream End of Paton Island, Va.
POTOMAC RIVER	159.8/Mouth of Catoctin Creek, Va.
Catoctin Creek	13.6/Head of Catoctin Creek
Catoctin Creek	13.6/Mouth of North Fork
North Fork	____/Head of North Fork
North Fork	0.0/Mouth of North Fork
Catoctin Creek	13.6/Mouth of North Fork
Catoctin Creek	13.6/Mouth of South Fork
South Fork	____/Head of South Fork
South Fork	0.0/Mouth of South Fork
Catoctin Creek	13.6/Mouth of South Fork
Catoctin Creek	7.2/Mouth of Milltown Creek
Milltown Creek	____/Head of Milltown Creek
Milltown Creek	0.0/Mouth of Milltown Creek
Catoctin Creek	7.2/Mouth of Milltown Creek
Catoctin Creek	0.0/Mouth of Catoctin Creek
POTOMAC RIVER	159.8/Mouth of Catoctin Creek, Va.
POTOMAC RIVER	159.6/Downstream end of Paton Island
POTOMAC RIVER	159.5/Bridge, U. S. Highway #15
POTOMAC RIVER	159.5/Gaging Station at Point of Rocks, Md. (D. A. 9,651.0)
POTOMAC RIVER	159.4/Sampling Station, D. C. Dept. of Public Health
POTOMAC RIVER	159.3/Upstream end of Heaters Island
POTOMAC RIVER	157.6/Downstream end of Heaters Island
POTOMAC RIVER	155.7/Mouth of Tuscarora Creek, Md.
Tuscarora Creek	____/Head of Tuscarora Creek
Tuscarora Creek	5.7/Bridge, Md. Highway #78
Tuscarora Creek	4.0/Bridge, Md. Highway #78
Tuscarora Creek	2.4/Bridge, U. S. Highway #15
Tuscarora Creek	0.6/Bridge, B & O R.R.
Tuscarora Creek	0.0/Mouth of Tuscarora Creek (D.A. 20.5)
POTOMAC RIVER	155.7/Mouth of Tuscarora Creek, Md.

D. A. Drainage Area, square miles

January, 1965

Appendix A

POTOMAC RIVER — DRAINAGE BASIN

Monocacy River — SUB-BASIN

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
POTOMAC RIVER	153.5/Mouth of Monocacy River (D.A. 9,696.7)
Monocacy River	52.5/Head of Monocacy River at Mason Dixon Line
Monocacy River	____/Intake & Outfall, Mt. Alto, Pa.
Monocacy River	____/Outfall, Fairfield, Pa.
Monocacy River	52.5/Mouth of Rock Creek
Rock Creek	____/Head of Rock Creek in Pa.
Rock Creek	____/Mouth of Stevens Run
Stevens Run	____/Head of Stevens Run
Stevens Run	0.0/Mouth of Stevens Run (D.A. 1.0)
Rock Creek	____/Mouth of Stevens Run
Rock Creek	____/Mouth of White Run
White Run	____/Head of White Run
White Run	0.0/Mouth of White Run (D.A. 13.7)
Rock Creek	____/Mouth of White Run
Rock Creek	____/Mouth of Littles Run
Littles Run	____/Head of Littles Run
Littles Run	0.0/Mouth of Littles Run (D.A. 7.4)
Rock Creek	____/Mouth of Littles Run
Rock Creek	____/Mouth of Plum Run
Plum Run	____/Head of Plum Run
Plum Run	0.0/Mouth of Plum Run (D.A. 3.8)
Rock Creek	____/Mouth of Plum Run
Rock Creek	1.2/Bridge, Secondary Road in Adams County, Pennsylvania
Rock Creek	/Outfall, Gettysburg, Pa.
Rock Creek	0.0/Mouth of Rock Creek (D.A. 64.4)
Monocacy River	52.5/Mouth of Rock Creek
Monocacy River	52.5/Mouth of Marsh Creek
Marsh Creek	____/Head of Marsh Creek in Pa.
Marsh Creek	____/Mouth of Little Marsh Creek
Little Marsh Creek	____/Head of Little Marsh Creek
Little Marsh Creek	____/Mouth of Poplar Spring Run
Poplar Spring Run	____/Head of Poplar Spring Run
Poplar Spring Run	0.0/Mouth of Poplar Spring Run (D.A. 1.9)
Little Marsh Creek	____/Mouth of Poplar Spring Run
Little Marsh Creek	0.0/Mouth of Little Marsh Creek (D.A. 21.1)
Marsh Creek	____/Mouth of Little Marsh Creek
Marsh Creek	____/Mouth of Willoughby Run
Willoughby Run	____/Head of Willoughby Run
Willoughby Run	0.0/Mouth of Willoughby Run (D.A. 9.8)
Marsh Creek	____/Mouth of Willoughby Run
Marsh Creek	____/Mouth of Plum Run
Plum Run	____/Head of Plum Run
Plum Run	0.0/Mouth of Plum Run (D.A. 2.8)
Marsh Creek	____/Mouth of Plum Run

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Marsh Creek	____/Intake, Gettysburg, Pa.
Marsh Creek	____/Intake & Outfall, Knouse Food Corp.
Marsh Creek	1.3/State and County Line: Upstream - Adams County, Pa., Downstream - Frederick County, Md.
Marsh Creek	0.0/Mouth of Marsh Creek (D.A. 80.1)
Monocacy River	52.5/Mouth of Marsh Creek
Monocacy River*	52.2/Dam
Monocacy River	52.1/Bridge, Harney Road
Monocacy River	50.5/Mouth of Alloway Creek
Alloway Creek	____/Head of Alloway Creek in Adams Co.
Alloway Creek	____/Mouth of Plum Creek
Plum Creek	____/Head of Plum Creek
Plum Creek	0.0/Mouth of Plum Creek (D.A. 2.9)
Alloway Creek	____/Mouth of Plum Creek
Alloway Creek	____/State and County Line: Upstream - Adams County, Pa., Downstream - Carroll County, Md.
Alloway Creek	0.0/Mouth of Alloway Creek (D.A. 23.8)
Monocacy River	50.5/Mouth of Alloway Creek
Monocacy River	50.4/Starners Dam
Monocacy River	50.4/Bridge, Shoemaker Road
Monocacy River	49.2/Bridge, Bullfrog Road
Monocacy River	47.9/Bridge, Md. 97 at Bridgeport, Md.
Monocacy River	47.9/Gaging Station, Bridgeport, Md. (D.A. 173.7)
Monocacy River	47.0/Mouth of Cattail Branch
Cattail Branch	____/Head of Cattail Branch
Cattail Branch	0.0/Mouth of Cattail Branch
Monocacy River	47.0/Mouth of Cattail Branch
Monocacy River	45.3/Mouth of Piney Creek
Piney Creek	____/Head of Piney Creek in Pa.
Piney Creek	____/Bridge, U. S. 140 near Littlestown
Piney Creek	____/Intake & Outfall, B. H. Shriver Co., Pa.
Piney Creek	____/State and County Line: Upstream - Adams County, Pa., Downstream - Carroll County, Md.
Piney Creek	____/Bridge, Md. 71
Piney Creek	9.1/Bridge, Secondary Road upstream of Taneytown Sewage Disposal Plant
Piney Creek	8.9/Gaging Station, Taneytown, Md. (D. A. 22.9)
Piney Creek	8.85/Outfall, A. W. Feeser & Co., Inc.
Piney Creek	8.85/Outfall, Cambridge Rubber Co.
Piney Creek	8.4/Outfall, Taneytown Sewage Disposal Plant
Piney Creek	7.4/Bridge, Secondary Road below Taneytown Sewage Disposal Plant

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER/MILE DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Piney Creek	____/Bridge, Md. 32 below Taneytown
Piney Creek	____/Outfall, Essig Packing Co.
Piney Creek	____/ E. J. Nusbaum Co., Taneytown
Piney Creek	0.0/Mouth of Piney Creek (D.A. 35.5)
Monocacy River	45.3/Mouth of Piney Creek
Monocacy River	45.2/Bridge, Keysville Road
Monocacy River	43.9/Mouth of Toms Creek
Toms Creek	____/Head of Toms Creek in Pa.
Toms Creek	____/Mouth of Copper Run
Copper Run	____/Head of Copper Run
Copper Run	0.0/Mouth of Copper Run (D.A. 1.2)
Toms Creek	____/Mouth of Copper Run
Toms Creek	____/Mouth of Miney Branch
Miney Branch	____/Head of Miney Branch
Miney Branch	0.0/Mouth of Miney Branch (D.A. 8.8)
Toms Creek	____/Mouth of Miney Branch
Toms Creek	10.2/Bridge, Unimproved Road at Shanks Mill
Toms Creek	10.0/Mouth of Friends Creek
Friends Creek	4.4/Head of Friends Creek near Victor Cullen State Hospital
Friends Creek	4.4/Mouth of North Fork of Friends Creek
North Fork	1.7/Head of North Fork
North Fork	1.7/Outfall, Victor Cullen State Hospital
North Fork	0.0/Mouth of North Fork of Friends Creek
Friends Creek	4.4/Mouth of North Fork of Friends Creek
Friends Creek	4.4/Mouth of South Fork of Friends Creek
South Fork	____/Head of South Fork
South Fork	3.5/Bridge, Md. 81, N.W. of Sabillasville
South Fork	0.0/Mouth of South Fork of Friends Creek
Friends Creek	4.4/Mouth of South Fork of Friends Creek
Friends Creek	2.1/State and County Line: Upstream - Frederick, Md. Downstream - Adams Pa.
Friends Creek	0.0/Mouth of Friends Creek (D.A. 13.5)
Toms Creek	10.0/Mouth of Friends Creek
Toms Creek	9.8/State and County Line: Upstream - Adams County, Pa., Downstream - Frederick County, Md. (D.A. 36.6)

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Toms Creek	8.1/Mouth of Turkey Creek
Turkey Creek	3.3/Head of Turkey Creek
Turkey Creek	2.8/Head of Reservoir
Turkey Creek	2.6/Dam
Turkey Creek	___/Intake, Emmitsburg, Md.
Turkey Creek	0.0/Mouth of Turkey Creek
Toms Creek	8.1/Mouth of Turkey Creek
Toms Creek	8.0/Bridge, Medium-duty Road, West of Emmitsburg
Toms Creek	7.2/Bridge, U. S. 15 near St. Josephs College
Toms Creek	6.7/Outfall, St. Josephs College
Toms Creek	6.7/Mouth of Unnamed Tributary
Unnamed Tributary	1.3/Head of Unnamed Tributary
Unnamed Tributary	1.3/Outfall, Mt. St. Mary's College
Unnamed Tributary	0.0/Mouth of Unnamed Tributary
Toms Creek	6.7/Mouth of Unnamed Tributary
Toms Creek	5.4/Mouth of Flat Run
Flat Run	___/Head of Flat Run in Pa.
Flat Run	3.5/State and County Line: Upstream - Adams Co. Pa., Downstream - Frederick Co. Md.
Flat Run	2.2/Bridge, U. S. 15 at Emmitsburg
Flat Run	1.7/Bridge, Md. 32 at Emmitsburg
Flat Run	1.6/Outfall, Lancaster Milk Co.
Flat Run	1.3/Outfall, Emmitsburg, Md.
Flat Run	0.0/Mouth of Flat Run
Toms Creek	5.4/Mouth of Flat Run
Toms Creek	4.8/Mouth of Middle Creek
Middle Creek	___/Head of Middle Creek in Adams Co., Pa.
Middle Creek	___/Mouth of Spring Run
Spring Run	___/Head of Spring Run
Spring Run	0.0/Mouth of Spring Run (D.A. 2.3)
Middle Creek	___/Mouth of Spring Run
Middle Creek	___/Mouth of Muddy Run
Muddy Run	___/Head of Muddy Run
Muddy Run	___/Mouth of Rattling Run
Rattling Run	___/Head of Rattling Run
Rattling Run	0.0/Mouth of Rattling Run (D. A. 1.4)
Muddy Run	___/Mouth of Rattling Run
Muddy Run	0.0/Mouth of Muddy Run
Middle Creek	___/Mouth of Muddy Run (D.A. 6.8)
Middle Creek	3.9/Bridge, U. S. 15
Middle Creek	3.2/State and County Line: Upstream - Adams Co., Pa. Downstream - Frederick Co., Md.

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Middle Creek	2.0/Bridge, Secondary Road
Middle Creek	1.4/Bridge, Md. 32 East of Emmitsburg
Middle Creek	0.0/Mouth of Middle Creek (D.A. 26.9)
Toms Creek	4.8/Mouth of Middle Creek
Toms Creek	0.4/Bridge, Secondary Road Northeast of Six Bridge
Toms Creek	0.0/Mouth of Toms Creek (D.A. 88.8)
Monocacy River	43.9/Mouth of Toms Creek
Monocacy River	43.0/Outfall, Castle Cheese Co.
Monocacy River	____/Outfall, Mt. Pleasant Can Co., Westminster, Md.
Monocacy River	42.8/Bridge, Six Bridge
Monocacy River	41.2/Mouth of Stoney Branch
Stoney Branch	____/Head of Stoney Branch near Mt. St. Marys College
Stoney Branch	0.0/Mouth of Stoney Branch
Monocacy River	41.2/Mouth of Stoney Branch
Monocacy River	40.1/Bridge, Mumma Bridge
Monocacy River	38.6/Bridge, Western Md. R.R.
Monocacy River	38.3/Mouth of Double Pipe Creek (D.A. 318.7)
Double Pipe Creek**	1.8/Head of Double Pipe Creek
Double Pipe Creek	1.8/Mouth of Big Pipe Creek
Big Pipe Creek	____/Head of Big Pipe Creek
Big Pipe Creek	27.1/Bridge, Md. 496, at Bachman Mills (D. A. 9.39)
Big Pipe Creek	27.1/Gaging Station, Bachman Mills (D. A. 9.39)
Big Pipe Creek	15.7/Mouth of Silver Run
Silver Run	____/Head of Silver Run
Silver Run	4.1/Outfall, A. W. Feeser & Co.
Silver Run	0.0/Mouth of Silver Run
Big Pipe Creek	15.7/Mouth of Silver Run
Big Pipe Creek	15.6/Gaging Station, Pipe Creek, (D. A. 51.6)
Big Pipe Creek	12.0/Bridge, Md. #32
Big Pipe Creek	11.3/Mouth of Bear Branch
Bear Branch	____/Head of Bear Branch
Bear Branch	8.9/Outfall, C. K. Little Canning Company
Bear Branch	0.0/Mouth of Bear Branch
Big Pipe Creek	11.3/Mouth of Bear Branch
Big Pipe Creek	10.8/Mouth of Meadow Branch
Meadow Branch	____/Head of Meadow Branch
Meadow Branch	5.7/Mouth of Unnamed Tributary
Unnamed Tributary	0.9/Head of Unnamed Tributary
Unnamed Tributary	0.6/Outfall, Willow Farms Dairy
Unnamed Tributary	0.0/Mouth of Unnamed Tributary
Meadow Branch	5.7/Mouth of Unnamed Tributary

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Meadow Branch	4.4/Bridge, Secondary Road
Meadow Branch	2.9/Mouth of Rattlesnake Branch
Rattlesnake Branch	____/Head of Rattlesnake Branch
Rattlesnake Branch	0.0/Mouth of Rattlesnake Branch
Meadow Branch	2.9/Mouth of Rattlesnake Branch
Meadow Branch	2.1/Bridge, Md. 84 near Uniontown, Md. (D. A. 12.6)
Meadow Branch	2.1/Gaging Station, Uniontown (D. A. 12.6)
Meadow Branch	0.0/Mouth of Meadow Branch
Big Pipe Creek	10.8/Mouth of Meadow Branch
Big Pipe Creek	3.9/Outfall, A. W. Feeser & Co.
Big Pipe Creek	3.5/Gaging Station, Bruceville, Md. (D. A. 102.4)
Big Pipe Creek	0.7/Bridge, Md. 77 Northeast of Detour
Big Pipe Creek	0.0/Mouth of Big Pipe Creek (D.A. 107.6)
Double Pipe Creek	1.8/Mouth of Big Pipe Creek
Double Pipe Creek	1.8/Mouth of Little Pipe Creek
Little Pipe Creek	____/Head of Little Pipe Creek
Little Pipe Creek	23.8/Outfall, Westminster Sewage Treatment Plant
Little Pipe Creek	23.2/Bridge, Md. 27
Little Pipe Creek	21.1/Bridge, Md. 622 near Avondale
Little Pipe Creek	20.4/Mouth of Copps Branch
Copps Branch	____/Head of Copps Branch
Copps Branch	0.0/Mouth of Copps Branch
Little Pipe Creek	20.4/Mouth of Copps Branch
Little Pipe Creek	20.3/Gaging Station, Avondale, Md. (D. A. 8.10)
Little Pipe Creek	20.2/Bridge, Md. 31 near Avondale
Little Pipe Creek	17.7/Mouth of Turkeyfoot Run
Turkeyfoot Run	____/Head of Turkeyfoot Run
Turkeyfoot Run	1.0/Mouth of Unnamed Tributary
Unnamed Tributary	____/Head of Unnamed Tributary
Unnamed Tributary	0.9/Outfall, Teeters Quarry
Unnamed Tributary	0.0/Mouth of Unnamed Tributary
Turkeyfoot Run	1.0/Mouth of Unnamed Tributary
Turkeyfoot Run	0.0/Mouth of Turkeyfoot Run
Little Pipe Creek	17.7/Mouth of Turkeyfoot Run
Little Pipe Creek	____/Outfall, New Windsor Farmers Co-op

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Little Pipe Creek	14.5/Mouth of Dickenson Run
Dickenson Run	___/Head of Dickenson Run
Dickenson Run	1.0/Outfall, Western Md. Dairy
Dickenson Run	___/Outfall, New Windsor Md.
Dickenson Run	0.0/Mouth of Dickenson Run
Little Pipe Creek	14.5/Mouth of Dickenson Run
Little Pipe Creek	11.5/Mouth of Wolf Pit Branch
Wolf Pit Branch	1.9/Head of Wolf Pit Branch
Wolf Pit Branch	0.1/Gaging Station, Linwood, Md. (D. A. 2.01)
Wolf Pit Branch	0.0/Mouth of Wolf Pit Branch
Little Pipe Creek	11.5/Mouth of Wolf Pit Branch
Little Pipe Creek	11.4/Outfall, Joseph N. Weller Co.
Little Pipe Creek	9.3/Outfall, D. & M. Laundromat
Little Pipe Creek	9.3/Outfall, Union Bridge
Little Pipe Creek	9.2/Gaging Station, Union Bridge (D. A. 40.4)
Little Pipe Creek	8.6/Outfall, Yingling Bros.
Little Pipe Creek	8.3/Mouth of Sams Creek
Sams Creek	___/Head of Sams Creek
Sams Creek***	___/Bridge, Secondary Road between Marston and Weldon
Sams Creek	0.0/Mouth of Sams Creek
Little Pipe Creek****	8.3/Mouth of Sams Creek
Little Pipe Creek	0.0/Mouth of Little Pipe Creek (D. A. 76.5)
Double Pipe Creek	1.8/Mouth of Little Pipe Creek
Double Pipe Creek	1.6/Bridge, Md. 77 at Detour, Md.
Double Pipe Creek	1.4/Outfall, Western Maryland Dairy
Double Pipe Creek	0.0/Mouth of Double Pipe Creek (D. A. 192.3)
Monocacy River	38.3/Mouth of Double Pipe Creek
Monocacy River	38.2/Bridge, Md. 77 (Millers Bridge)
Monocacy River	35.5/Bridge, Le Gore Bridge
Monocacy River	34.7/Stulls Ford
Monocacy River	34.6/Mouth of Owens Creek
Owens Creek	___/Head of Owens Creek
Owens Creek	14.7/Intake, Victor Cullen State Hospital
Owens Creek	14.2/Gaging Station, Lantz, Md. (D. A. 5.7)
Owens Creek	13.8/Bridge, Medium-Duty Road near Lantz, Md.
Owens Creek	9.5/Bridge, U. S. 15
Owens Creek	8.9/Bridge, Medium-Duty Road
Owens Creek	8.0/Mouth of Little Owens Creek
Little Owens Creek	___/Head of Little Owens Creek
Little Owens Creek	1.2/Bridge, U. S. 15
Little Owens Creek	0.0/Mouth of Little Owens Creek
Owens Creek	8.0/Mouth of Little Owens Creek

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Owens Creek	7.5/Fish Hatchery near Thurmont, Md.
Owens Creek	7.1/Bridge, Secondary Road
Owens Creek	4.5/Bridge, Md. 77 near Loys
Owens Creek	3.9/Bridge, Md. 72 near Loys
Owens Creek	1.4/Mouth of Beaver Branch
Beaver Branch	___/Head of Beaver Branch
Beaver Branch	1.0/Bridge, Md. 77 near Rocky Ridge
Beaver Branch	0.0/Mouth of Beaver Branch
Owens Creek	1.4/Mouth of Beaver Branch
Owens Creek	0.7/Bridge, Secondary Road
Owens Creek	___/Outfall, Foxville, Md.
Owens Creek	0.0/Mouth of Owens Creek (D.A. 39.8)
Monocacy River	34.6/Mouth of Owens Creek
Monocacy River	32.9/Bridge, Md. 550
Monocacy River	31.6/Mouth of Hunting Creek
Hunting Creek	___/Head of Hunting Creek
Hunting Creek	12.5/Mouth of Cunningham Falls
Cunningham Falls	___/Head of Cunningham Falls
Cunningham Falls	2.5/Town of Foxville
Cunningham Falls	0.0/Mouth of Cunningham Falls
Hunting Creek	12.5/Mouth of Cunningham Falls
Hunting Creek	___/Intake, Recreation Camp near Foxville, Md.
Hunting Creek	10.0/Bridge, Md. 77 near Camp Peniel
Hunting Creek	8.5/Bridge, Md. 77 near Thurmont
Hunting Creek	8.0/Outfall, Howard Hat Co.
Hunting Creek	7.9/Bridge, U. S. 15 at Thurmont
Hunting Creek	___/Bridge, Potomac Edison R.R.
Hunting Creek	___/Bridge, Secondary Road South of Thurmont
Hunting Creek	6.9/Outfall, Thurmont
Hunting Creek	6.8/Fish Ponds near Thurmont
Hunting Creek	___/Mouth of High Run
High Run	2.6/Head of High Run
High Run	0.9/Bridge, U. S. 15 near Thurmont
High Run	___/Intake, Thurmont, Md.
High Run	0.0/Mouth of High Run
Hunting Creek	___/Mouth of High Run
Hunting Creek	6.1/Mouth of Muddy Run
Muddy Run	2.6/Head of Muddy Run
Muddy Run	1.6/Bridge, U. S. 15
Muddy Run	0.0/Mouth of Muddy Run
Hunting Creek	6.1/Mouth of Muddy Run
Hunting Creek	___/Bridge, Secondary Rd. at Jimtown
Hunting Creek	5.2/Gaging Station, Jimtown, Md. (D. A. 18.4)
Hunting Creek	2.7/Mouth of Little Hunting Creek
Little Hunting Creek	___/Head of Little Hunting Creek
Little Hunting Creek	___/Mouth of Buzzard Branch

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Buzzard Branch	___/Head of Buzzard Branch
Buzzard Branch	0.0/Mouth of Buzzard Branch
Little Hunting Creek	___/Mouth of Buzzard Branch
Little Hunting Creek	13.0/Bridge, U. S. 15 at Catoctin Furnace
Little Hunting Creek	12.7/Outfall, J. Austin Fraley
Little Hunting Creek	12.5/Outfall, Fraley Rendering Plant
Little Hunting Creek	0.0/Mouth of Little Hunting Creek
Hunting Creek	2.7/Mouth of Little Hunting Creek
Hunting Creek	1.9/Mouth of Sandy Run
Sandy Run	___/Head of Sandy Run
Sandy Run	0.0/Mouth of Sandy Run
Hunting Creek	1.9/Mouth of Sandy Run
Hunting Creek	0.0/Mouth of Hunting Creek (D.A. 42.2)
Monocacy River	31.6/Mouth of Hunting Creek
Monocacy River	31.0/Mouth of Broad Run
Broad Run	___/Head of Broad Run
Broad Run	0.0/Mouth of Broad Run
Monocacy River	31.0/Mouth of Broad Run
Monocacy River	29.9/Bridge, Duncan Road
Monocacy River	28.2/Bridge, Devilbiss Bridge Road
Monocacy River	27.3/Mouth of Fishing Creek
Fishing Creek	___/Head of Fishing Creek
Fishing Creek	11.4/Mouth of Steep Creek
Steep Creek	___/Head of Steep Creek
Steep Creek	0.0/Mouth of Steep Creek
Fishing Creek	11.4/Mouth of Steep Creek
Fishing Creek	9.9/Mouth of Little Fishing Creek
Little Fishing Creek	___/Head of Little Fishing Creek
Little Fishing Creek	0.0/Mouth of Little Fishing Creek
Fishing Creek	9.9/Mouth of Little Fishing Creek
Fishing Creek	9.9/Gaging Station, Lewistown, Md. (D. A. 7.1)
Fishing Creek	9.8/Head of Fishing Creek Reservoir
Fishing Creek	9.6/Dam (Fishing Creek Reservoir)
Fishing Creek	8.7/Connection with Tuscarora Creek
Fishing Creek	8.6/Bridge, Secondary Road at Mountainda
Fishing Creek	8.4/Bridge, Secondary Road near Mountain dale
Fishing Creek	7.5/Bridge, Secondary Road near Fish Ponds
Fishing Creek	6.9/Bridge, Unimproved Dirt Road near Fish Ponds
Fishing Creek	6.4/Bridge, U. S. 15 at Lewistown, Md.
Fishing Creek	5.8/Bridge, Md. 72 below Lewistown
Fishing Creek	4.2/Bridge, Secondary Road near Utica
Fishing Creek	4.0/Bridge, Secondary Road at Utica
Fishing Creek	3.7/Bridge, Secondary Road near Utica

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Fishing Creek	0.7/Bridge, Devilbiss Bridge Road
Fishing Creek	___/Intake, Frederick, Md.
Fishing Creek	0.0/Mouth of Fishing Creek (D.A. 18.2)
Monocacy River	27.3/Mouth of Fishing Creek
Monocacy River	26.1/Mouth of Muddy Run
Muddy Run	4.9/Head of Muddy Run
Muddy Run	4.5/Bridge, Potomac Edison R.R.
Muddy Run	4.4/Bridge, Secondary Road near Locust Grove Station
Muddy Run	3.8/Bridge, Secondary Road
Muddy Run	2.5/Bridge, Bartgis Road near Hansonville
Muddy Run	0.8/Bridge, U. S. 15 near Hansonville
Muddy Run	0.0/Mouth of Muddy Run
Monocacy River	26.1/Mouth of Muddy Run
Monocacy River	25.2/Bridge, Biggs Ford Bridge
Monocacy River	24.9/Mouth of Glade Creek
Glade Creek	7.1/Head of Glade Creek
Glade Creek	3.3/Bridge, Secondary Road near Walkersville
Glade Creek	2.3/Bridge, Secondary Road at Walkersville
Glade Creek	1.2/Bridge, Secondary Road at Fountain Rock
Glade Creek	0.0/Mouth of Glade Creek
Monocacy River	24.9/Mouth of Glade Creek
Monocacy River	23.9/Bridge, Pa. R.R.
Monocacy River	23.0/Outfall, Walkersville, Md.
Monocacy River	22.7/Mouth of Tuscarora Creek
Tuscarora Creek	___/Head of Tuscarora Creek
Tuscarora Creek	___/Bridge, Secondary Road at Mountaindale
Tuscarora Creek	3.6/Bridge, Secondary Road at Bloomfield
Tuscarora Creek	2.0/Bridge, U. S. 15 near Harmony Grove
Tuscarora Creek	1.5/Bridge, Pennsylvania R.R.
Tuscarora Creek	0.0/Mouth of Tuscarora Creek (D.A. 16.8)
Monocacy River	22.7/Mouth of Tuscarora Creek
Monocacy River	22.4/Bridge, Md. 26
Monocacy River	22.4/Gaging Station, Frederick, Md. (D. A. 665.0)
Monocacy River	22.2/Mouth of Israel Creek
Israel Creek	___/Head of Israel Creek
Israel Creek	___/Bridge, Muth Road
Israel Creek	___/Bridge, Secondary Road above Woodsboro Fish Hatchery
Israel Creek	10.1/Bridge, Secondary Road at Fish Hatchery, Woodsboro
Israel Creek	10.1/Mouth of Unnamed Tributary
Unnamed Tributary	___/Head of Unnamed Tributary
Unnamed Tributary	1.1/Outfall, Le Gore Lime Co.

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Unnamed Tributary	0.0/Mouth of Unnamed Tributary
Israel Creek	10.1/Mouth of Unnamed Tributary
Israel Creek	___/Bridge, Md. 550 at Woodsboro
Israel Creek	5.5/Bridge, Hoffman Road
Israel Creek	4.4/Mouth of Unnamed Tributary
Unnamed Tributary	___/Head of Unnamed Tributary
Unnamed Tributary	3.1/Head of Walkersville Reservoir
Unnamed Tributary	3.0/Dam, Walkersville Reservoir
Unnamed Tributary	2.9/Bridge, Secondary Road below Walkersville Reservoir
Unnamed Tributary	0.2/Bridge, Secondary Road
Unnamed Tributary	0.0/Mouth of Unnamed Tributary
Israel Creek	4.4/Mouth of Unnamed Tributary
Israel Creek	3.2/Bridge, Secondary Road near Walkersville
Israel Creek	1.7/Intake, Mill Race near Ceresville
Israel Creek	1.0/Bridge, Md. 26
Israel Creek	0.3/Bridge, Secondary Road at Ceresville
Israel Creek	0.1/Mouth of Unnamed Branch
Unnamed Branch	___/Head of Unnamed Branch
Unnamed Branch	0.2/Bridge, Md. 26 at Ceresville
Unnamed Branch	0.1/Outfall, Mill Race at Ceresville
Unnamed Branch	0.0/Mouth of Unnamed Branch
Israel Creek	0.1/Mouth of Unnamed Branch
Israel Creek	0.0/Mouth of Israel Creek (D.A. 33.2)
Monocacy River	22.2/Mouth of Israel Creek
Monocacy River	22.0/Outfall, Woodsboro
Monocacy River	21.5/Mouth of Addison Run
Addison Run	3.7/Head of Addison Run near Mt. Pleasant
Addison Run	2.6/Bridge, Secondary Road near Mt. Pleasant
Addison Run	0.0/Mouth of Addison Run
Monocacy River	21.5/Mouth of Addison Run
Monocacy River	20.4/Intake, Camp Dietrick Filtration Plant
Monocacy River	___/Intake, Frederick, Md.
Monocacy River	20.1/Outfall, Camp Dietrick Sewage Disposal Plant
Monocacy River	19.1/Bridge, Gashouse Pike near Frederick
Monocacy River	18.8/Mouth of Carroll Creek
Carroll Creek	___/Head of Carroll Creek near Edgewood
Carroll Creek	___/Bridge, Secondary Road near Edgewood
Carroll Creek	___/Bridge, Shookstown Road
Carroll Creek	3.0/Mouth of Unnamed Tributary
Unnamed Tributary	___/Head of Unnamed Tributary
Unnamed Tributary	0.9/Outfall, M. J. Grove, Co.
Unnamed Tributary	0.0/Mouth of Unnamed Tributary
Carroll Creek	3.0/Mouth of Unnamed Tributary

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Carroll Creek	2.4/Bridge, U. S. 40 (West Patrick St.)
Carroll Creek	___/Bridge, U. S. 15 (South Market St.)
Carroll Creek	1.9/Outfall, Eveready Co.
Carroll Creek	1.8/Intake, Corning Fibre Box Corp.
Carroll Creek	1.75/Outfall, Highs, Dairy
Carroll Creek	1.7/Outfall, Sealtest Dairy
Carroll Creek	1.6/Bridge, U. S. 40
Carroll Creek	0.7/Outfall, Supreme Concrete
Carroll Creek	0.1/Bridge, Secondary Road
Carroll Creek	0.0/Mouth of Carroll Creek (D.A. 18.6)
Monocacy River	18.8/Mouth of Carroll Creek
Monocacy River	18.7/Outfall, Frederick Sewage Disposal Plant
Monocacy River	16.3/Mouth of Linganore Creek
Linganore Creek	14.5/Head of Linganore Creek
Linganore Creek	14.5/Mouth of North Fork
North Fork	___/Head of North Fork
North Fork	4.6/Mouth of Weldon Creek
Weldon Creek	3.9/Head of Weldon Creek near Covers Corner, Carroll Co.
Weldon Creek	3.6/Bridge, Secondary Road
Weldon Creek	3.0/County Line: Upstream - Carroll, Downstream - Frederick
Weldon Creek	3.0/Bridge, Secondary Road near Weldon
Weldon Creek	2.7/Bridge, Secondary Road near Weldon
Weldon Creek	1.2/Bridge, Secondary Road near Oak Orchard
Weldon Creek	0.0/Mouth of Weldon Creek
North Fork	4.6/Mouth of Weldon Creek
North Fork	3.9/Bridge, Md. 26 near Unionville
North Fork	2.6/Bridge, Secondary Road near Unionville
North Fork	2.4/Mouth of Unnamed Tributary
Unnamed Tributary	___/Head of Unnamed Tributary
Unnamed Tributary	0.9/Outfall, Maryland Milk Producers Association Dairy
Unnamed Tributary	0.0/Mouth of Unnamed Tributary
North Fork	2.4/Mouth of Unnamed Tributary
North Fork	2.0/Mouth of Talbot Branch
Talbot Branch	7.5/Head of Talbot Branch in Carroll County
Talbot Branch	6.8/Bridge, Md. 26 at Franklinville
Talbot Branch	4.7/County Line: Upstream - Carroll, Downstream - Frederick

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Talbot Branch	___/Outfall, George W. Magin Co.
Talbot Branch	0.0/Mouth of Talbot Branch
North Fork	2.0/Mouth of Talbot Branch
North Fork	0.8/Bridge, Secondary Road
North Fork	0.0/Mouth of North Fork
Linganore Creek	14.5/Mouth of North Fork
Linganore Creek	14.5/Mouth of South Fork
South Fork	___/Head of South Fork in Carroll C
South Fork	___/County Line: Upstream - Carroll Downstream - Frederick
South Fork	2.0/Mouth of Woodville Branch
Woodville Branch	___/Head of Woodville Branch
Woodville Branch	2.7/Bridge, Secondary Road at Woodville
Woodville Branch	0.0/Mouth of Woodville Branch
South Fork	2.0/Mouth of Woodville Branch
South Fork	1.1/Bridge, Secondary Road at Linganore
South Fork	___/Outfall, Western Md. Dairy
South Fork	0.0/Mouth of South Fork
Linganore Creek	14.5/Mouth of South Fork
Linganore Creek	12.6/Mouth of Dollyhyde Creek
Dollyhyde Creek	5.5/Head of Dollyhyde Creek
Dollyhyde Creek	5.1/Bridge, Md. 31 near Oldfield
Dollyhyde Creek	3.8/Bridge, Md. 26 near Libertytown
Dollyhyde Creek	0.0/Mouth of Dollyhyde Creek
Linganore Creek	12.6/Mouth of Dollyhyde Creek
Linganore Creek	12.5/Bridge, Md. 75
Linganore Creek	11.8/Mouth of Town Branch
Town Branch	___/Head of Town Branch
Town Branch	___/Bridge, Md. 26 at Libertytown
Town Branch	___/Bridge, Md. 75 near Libertytown
Town Branch	0.0/Mouth of Town Branch
Linganore Creek	11.8/Mouth of Town Branch
Linganore Creek	10.0/Bridge, Annapolis Road
Linganore Creek	7.6/Bridge, Gashouse Pike
Linganore Creek	6.5/Mouth of Bens Branch
Bens Branch	___/Head of Bens Branch
Bens Branch	4.2/Bridge, Unimproved Road near Lime Mill
Bens Branch	3.2/Bridge, Md. 75 at New London
Bens Branch	0.8/Mouth of Hazelnut Run
Hazelnut Run	___/Head of Hazelnut Run
Hazelnut Run	0.0/Mouth of Hazelnut Run
Bens Branch	0.8/Mouth of Hazelnut Run
Bens Branch	0.0/Mouth of Bens Branch
Linganore Creek	6.5/Mouth of Bens Branch
Linganore Creek	5.1/Bridge, Boyers Mill Road

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Linganore Creek	2.25/Gaging Station, Frederick, Md. (D. A. 82.3)
Linganore Creek	1.1/Intake, Frederick Filtration Plant (D. A. 84.6)
Linganore Creek	0.7/Mouth of Long Branch
Long Branch	___/Head of Long Branch
Long Branch	2.4/Bridge, U. S. 40
Long Branch	0.0/Mouth of Long Branch
Linganore Creek	0.7/Mouth of Long Branch
Linganore Creek	0.4/Bridge, Linganore Road
Linganore Creek	0.0/Mouth of Linganore Creek (D.A. 88.4)
Monocacy River	16.3/Mouth of Linganore Creek
Monocacy River	15.8/Gaging Station, Jug Bridge
Monocacy River	15.6/Bridge, U. S. 40 (National Road)
Monocacy River	14.6/Bridge, Reels Mill Road
Monocacy River	13.2/Bridge, Baltimore & Ohio R.R.
Monocacy River	13.0/Mouth of Bush Creek
Bush Creek	___/Head of Bush Creek
Bush Creek	8.7/Outfall, George W. McComas & Co.
Bush Creek	0.0/Mouth of Bush Creek (D.A. 33.7)
Monocacy River	13.0/Mouth of Bush Creek
Monocacy River	12.9/Bridge, Md. 355
Monocacy River	12.3/Bridge, U. S. 240 (Interstate 70S)
Monocacy River	11.7/Mouth of Ballenger Creek
Ballenger Creek	___/Head of Ballenger Creek
Ballenger Creek	0.0/Mouth of Ballenger Creek (D.A. 18.0)
Monocacy River	11.7/Mouth of Ballenger Creek
Monocacy River	10.4/Intake, Alpha Portland Cement Co.
Monocacy River	9.5/Mouth of Rocky Fountain Run
Rocky Fountain Run	___/Head of Rocky Fountain Run
Rocky Fountain Run	0.9/Mouth of Horsehead Run
Horsehead Run	___/Head of Horsehead Run
Horsehead Run	0.0/Mouth of Horsehead Run
Rocky Fountain Run	0.9/Mouth of Horsehead Run
Rocky Fountain Run	0.0/Mouth of Rocky Fountain Run
Monocacy River	9.5/Mouth of Rocky Fountain Run
Monocacy River	9.3/Dam above Michaels Mill
Monocacy River	8.9/Bridge, Md. 80 near Buckeystown
Monocacy River	5.9/Mouth of Bennett Creek
Bennett Creek	___/Head of Bennett Creek near Damascus, Montgomery County
Bennett Creek	14.6/Bridge, Md. 122 at Browningsville
Bennett Creek	13.1/County Line: Upstream - Montgomery Downstream - Frederick
Bennett Creek	11.1/Bridge, Md. 75 at Green Valley
Bennett Creek	9.1/Mouth of Fahrney Branch
Fahrney Branch	10.6/Head of Fahrney Branch
Fahrney Branch	10.2/County Line: Upstream - Frederick, Downstream - Montgomery

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Fahrney Branch	9.1/Bridge, Md. 80 near Claggettsville
Fahrney Branch	8.1/Bridge, Secondary Road near Kemptown
Fahrney Branch	9.0/Outfall, Hardy & Green Co.
Fahrney Branch	8.0/County Line: Upstream - Montgomery, Downstream - Frederick
Fahrney Branch	4.6/Secondary Road at Fountain Mills
Fahrney Branch	0.0/Mouth of Fahrney Branch
Bennett Creek	9.1/Mouth of Fahrney Branch
Bennett Creek	8.4/Bridge, Primary Road near Urbana
Bennett Creek	7.3/Bridge, U. S. 240
Bennett Creek	6.2/Mouth of Little Bennett Creek
Little Bennett Creek	8.5/Head of Little Bennett Creek
Little Bennett Creek	4.4/Mouth of Soper Branch
Soper Branch	___/Head of Soper Branch
Soper Branch	0.0/Mouth of Soper Branch
Little Bennett Creek	4.4/Mouth of Soper Branch
Little Bennett Creek	4.2/Mouth of Dark Branch
Dark Branch	___/Head of Dark Branch
Dark Branch	0.0/Mouth of Dark Branch
Little Bennett Creek	4.2/Mouth of Dark Branch
Little Bennett Creek	3.7/Bridge, Md. 355 at Hyattstown
Little Bennett Creek	3.2/Bridge, U. S. 240 near Hyattstown
Little Bennett Creek	2.5/County Line: Upstream - Montgomery, Downstream - Frederick
Little Bennett Creek	2.2/Mouth of Wildcat Branch
Wildcat Branch	___/Head of Wildcat Branch
Wildcat Branch	0.4/Bridge, Ridge Road near Hyattstown
Wildcat Branch	0.0/Mouth of Wildcat Branch
Little Bennett Creek	2.2/Mouth of Wildcat Branch
Little Bennett Creek	0.0/Mouth of Little Bennett Creek
Bennett Creek	6.2/Mouth of Little Bennett Creek
Bennett Creek	4.0/Mouth of North Branch
North Branch	2.2/Head of North Branch
North Branch	2.0/Bridge, Md. 80 near Hope Hill
North Branch	0.0/Mouth of North Branch
Bennett Creek	4.0/Mouth of North Branch
Bennett Creek	2.3/Mouth of Bear Branch
Bear Branch	___/Head of Bear Branch
Bear Branch	0.0/Mouth of Bear Branch
Bennett Creek	2.3/Mouth of Bear Branch
Bennett Creek	2.1/Bridge, Secondary Road at Park Mills
Bennett Creek	2.1/Gaging Station, Park Mills, Md. (D. A. 62.8)

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Bennett Creek	1.8/Bridge, Secondary Road at Park Mills
Bennett Creek	1.8/Intake, Fish Hatchery at Lilypons
Bennett Creek	1.0/Bridge, Secondary Road at Lilypons Fish Hatchery
Bennett Creek	0.0/Mouth of Bennett Creek (D.A. 66.1)
Monocacy River	5.9/Mouth of Bennett Creek
Monocacy River	5.8/Bridge, Lilypons Bridge
Monocacy River	3.5/Bridge, at Greenfield Mills, Md.
Monocacy River	2.0/Sampling Station, D. C. Dept. of Health
Monocacy River	1.8/Mouth of Furnace Branch
Furnace Branch	____/Head of Furnace Branch
Furnace Branch	0.0/Mouth of Furnace Branch
Monocacy River	1.8/Mouth of Furnace Branch
Monocacy River	1.8/Bridge, Md. 28
Monocacy River	0.5/Bridge, B & O R.R.
Monocacy River	0.0/Mouth of Monocacy River (D.A. 970.2)
POTOMAC RIVER	153.5/Mouth of Monocacy River

D. A. Drainage area, square miles

* From this point to the mouth, the Monocacy River is the boundary between Frederick and Carroll Counties, Maryland.

** Double Pipe Creek (from head to mouth) is the boundary between Frederick and Carroll Counties, Maryland.

*** From this point to the mouth, Sams Creek is the boundary between Frederick and Carroll Counties, Maryland.

**** From this point to the mouth, Little Pipe Creek is the boundary between Frederick and Carroll Counties, Maryland

January, 1965

ADDENDUM-APPENDIX A
POTOMAC RIVER DRAINAGE BASIN
MONOCACY RIVER SUB-BASIN

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Delete the following entries:	
Page 1	
Potomac River	153.5-
Monocacy River	__/Outfall, Mt. Alto, Pa.
Monocacy River	__/Outfall, Fairfield, Pa.
Page 2	
Monocacy River	45.3-
Piney Creek	__/Intake and outfall, B. H. Shriver Company
Page 3	
Piney Creek	__/Outfall, Essig Packing Co.
Piney Creek	__/Outfall, E. J. Nusbaum Co.
Page 4	
Monocacy River	43.9-
Toms Creek	5.4-
Flat Run	1.6/ Outfall, Lancaster Milk Co.
Page 5	
Monocacy River	38.3-
Double Pipe Creek	1.8-
Big Pipe Creek	15.7-
Silver Run	4.1/ Outfall, A. W. Feeser and Company
Page 7	
Double Pipe Creek	1.8-
Little Pipe Creek	14.5-
Dickenson Run	1.0/ Outfall Western Maryland Dairy
Little Pipe Creek	11.4/ Outfall Joseph N. Weller Company
Little Pipe Creek	9.3/ Outfall D & M Laundromat
Little Pipe Creek	8.6/ Outfall, Yingling Bros.
Double Pipe Creek	1.4/ Outfall, Western Md. Dairy
Page 10	
Monocacy River	22.2-
Israel Creek	10.1-
Unnamed tributary	1.1/ Outfall, LeGore Lime Co.

ADDENDUM-APPENDIX A
POTOMAC RIVER DRAINAGE BASIN
MONOCACY RIVER SUB-BASIN

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Page 11	
Monocacy River	18.8-
Carroll Creek	3.0-
Unnamed Tributary	0.9/ Outfall, M. J. Grove Co.
Page 12	
Carroll Creek	1.75/ Outfall, Highs Dairy
Carroll Creek	1.7/ Outfall, Sealtest Dairy
Page 13	
Monocacy River	16.3-
Linganore Creek	14.5-
South Fork	__/Outfall, Western Md. Dairy
Page 14	
Monocacy River	13.0-
Bush Creek	8.7/ Outfall, George W. McComas and Company
Page 15	
Monocacy River	5.9-
Bennett Creek	9.1-
Fahrney Branch	9.0/ Outfall, Hardy & Green Company

Add or change the following entries to read:

Page 8	
Monocacy River	31.6-
Hunting Creek	8.0/ Outfall, Howard Late Co.
Page 11	
Monocacy River	19.7/ Outfall, Camp Detrick Sewage Disposal Plant

Appendix A

POTOMAC RIVER — DRAINAGE BASIN

Monocacy River to Mattawoman Creek — SUB-BASIN

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
POTOMAC RIVER	153.3/County Line, Upstream - Frederick Co., Downstream - Montgomery Co., Md.
POTOMAC RIVER	153.3/Mouth of Little Monocacy River
Little Monocacy River	___/Head of Little Monocacy River
Little Monocacy River	5.2/Bridge, B & O R.R.
Little Monocacy River	3.1/Bridge, Md. Highway #28
Little Monocacy River	0.0/Mouth of Little Monocacy River (D.A. 18.9)
POTOMAC RIVER	153.3/Mouth of Little Monocacy River
POTOMAC RIVER	152.1/Outfall, Potomac Edison Company
POTOMAC RIVER	150.5/Upstream End of Mason Island
POTOMAC RIVER	148.1/Downstream End of Mason Island
POTOMAC RIVER	147.6/Mouth of Limestone Branch, Va.
Limestone Branch	___/Head of Limestone Branch
Limestone Branch	1.2/Bridge, U. S. Highway #15
Limestone Branch	0.0/Mouth of Limestone Branch
POTOMAC RIVER	147.6/Mouth of Limestone Branch
POTOMAC RIVER	147.1/Whites Ferry on Md. Highway 107
POTOMAC RIVER	146.6/Upstream End of Harrison Island
POTOMAC RIVER	144.8/Downstream End of Harrison Island
POTOMAC RIVER	142.9/Mouth of Broad Run, Md.
Broad Run	___/Head of Broad Run
Broad Run	4.7/Bridge, Md. Highway #107
Broad Run	0.0/Mouth of Broad Run (D. A. 14.6)
POTOMAC RIVER	142.9/Mouth of Broad Run, Md.
POTOMAC RIVER	142.1/Mouth of Goose Creek, Va.
Goose Creek	___/Head of Goose Creek
Goose Creek	10.9/Gaging Station near Oatlands, Va.
Goose Creek	10.8/Bridge, Secondary Road
Goose Creek	8.2/Mouth of Beaverdam Creek
Beaverdam Creek	___/Head of Beaverdam Creek
Beaverdam Creek	0.0/Mouth of Beaverdam Creek
Goose Creek	8.2/Mouth of Beaverdam Creek
Goose Creek	6.2/Bridge, Murrays Ford Bridge
Goose Creek	3.6/Bridge, Washington & Old Dominion R.R.
Goose Creek	3.5/Mouth of Sycoline Creek, Va.
Sycoline Creek	___/Head of Sycoline Creek
Sycoline Creek	6.9/Bridge, U. S. Highway #50
Sycoline Creek	0.6/Bridge, Washington & Old Dominion R.R.
Sycoline Creek	0.0/Mouth of Sycoline Creek
Goose Creek	3.5/Mouth of Sycoline Creek
Goose Creek	___/Outfall, Goose Creek Country Club
Goose Creek	___/Outfall, Foxcroft School
Goose Creek	___/Outfall, Middleburg, Va.
Goose Creek	2.3/Mouth of Tuscarora Creek
Tuscarora Creek	___/Head of Tuscarora Creek
Tuscarora Creek	___/Outfall, Leesburg, Va.
Tuscarora Creek	0.0/Mouth of Tuscarora Creek
Goose Creek	2.3/Mouth of Tuscarora Creek

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Goose Creek	2.2/Bridge, Va. Highway #1
Goose Creek	2.2/Sampling Station, D. C. Dept. of Public Health
Goose Creek	1.6/Dam
Goose Creek	1.1/Mouth of Cattail Branch, Va.
Cattail Branch	___/Head of Cattail Branch
Cattail Branch	0.0/Mouth of Cattail Branch
Goose Creek	1.1/Mouth of Cattail Branch
Goose Creek	0.0/Mouth of Goose Creek (D.A. 385.2)
POTOMAC RIVER	142.1/Mouth of Goose Creek
POTOMAC RIVER	141.0/Mouth of Cabin Branch, Md.
Cabin Branch	___/Head of Cabin Branch
Cabin Branch	0.5/Mouth of Chisel Branch
Chisel Branch	___/Head of Chisel Branch
Chisel Branch	0.0/Mouth of Chisel Branch
Cabin Branch	0.5/Mouth of Chisel Branch
Cabin Branch	0.0/Mouth of Cabin Branch
POTOMAC RIVER	141.0/Mouth of Cabin Branch
POTOMAC RIVER	139.5/Mouth of Broad Run, Va.
Broad Run	___/Head of Broad Run
Broad Run	5.5/Bridge, Washington & Old Dominion R.R.
Broad Run	2.9/Mouth of Beaverdam Run
Beaverdam Run	___/Head of Beaverdam Run
Beaverdam Run	0.0/Mouth of Beaverdam Run
Broad Run	2.9/Mouth of Beaverdam Run
Broad Run	2.9/Mouth of Russell Branch
Russell Branch	___/Head of Russell Branch
Russell Branch	0.0/Mouth of Russell Branch
Broad Run	2.9/Mouth of Russell Branch
Broad Run	2.1/Bridge, Va. Highway #7
Broad Run	2.0/Sampling Station, D. C. Dept. of Public Health
Broad Run	0.0/Mouth of Broad Run
POTOMAC RIVER	139.5/Mouth of Broad Run, Va.
POTOMAC RIVER	137.9/Mouth of Horsepen Branch, Md.
Horsepen Branch	___/Head of Horsepen Branch
Horsepen Branch	0.7/Bridge, Sycamore Landing Road
Horsepen Branch	0.0/Mouth of Horsepen Branch
POTOMAC RIVER	137.9/Mouth of Horsepen Branch
POTOMAC RIVER	135.3/Mouth of Sugarland Run, Va.
Sugarland Run	___/Head of Sugarland Run
Sugarland Run	0.8/Junction with head of Old Sugarland Run
Sugarland Run	0.0/Mouth of Sugarland Run
POTOMAC RIVER	135.3/Mouth of Sugarland Run
POTOMAC RIVER	135.3/Upstream end of Lowes Island, Va.
POTOMAC RIVER	133.9/Mouth of Seneca Creek, Md.
Seneca Creek	6.8/Head of Seneca Creek

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Seneca Creek	6.8/Mouth of Little Seneca Creek
Little Seneca Creek	____/Head of Little Seneca Creek
Little Seneca Creek	10.3/Bridge, Md. Highway #355
Little Seneca Creek	9.5/Bridge, Old Baltimore Road
Little Seneca Creek	8.8/Bridge, U. S. Highway #240
Little Seneca Creek	5.7/Mouth of Cabin Branch
Cabin Branch	2.6/Head of Cabin Branch
Cabin Branch	2.0/Bridge, Old Baltimore Rd.
Cabin Branch	0.0/Mouth of Cabin Branch
Little Seneca Creek	5.7/Mouth of Cabin Branch
Little Seneca Creek	5.4/Mouth of Tenmile Creek
Tenmile Creek	____/Head of Tenmile Creek
Tenmile Creek	2.8/Bridge, Old. Baltimore Rd.
Tenmile Creek	0.5/Bridge, Md. Highway #121
Tenmile Creek	0.0/Mouth of Tenmile Creek
Little Seneca Creek	5.4/Mouth of Tenmile Creek
Little Seneca Creek	4.8/Bridge, B & O R.R.
Little Seneca Creek	4.2/Bridge, Md. Highway #124
Little Seneca Creek	2.7/Bridge, Hoyles Mill Road
Little Seneca Creek	0.9/Bridge, Schaeffer Road
Little Seneca Creek	0.0/Mouth of Little Seneca Creek (D.A. 38.8)
Seneca Creek	6.8/Mouth of Little Seneca Creek
Seneca Creek	6.8/Mouth of Bucklodge Branch
Bucklodge Branch	7.4/Head of Bucklodge Branch
Bucklodge Branch	6.2/Bridge, Old Baltimore Rd.
Bucklodge Branch	5.2/Bridge, Barnesville Road
Bucklodge Branch	4.3/Bridge, B & O R.R.
Bucklodge Branch	3.5/Bridge, Md. Highway #117
Bucklodge Branch	0.8/Bridge, Md. Highway #121
Bucklodge Branch	0.0/Mouth of Bucklodge Branch
Seneca Creek	6.8/Mouth of Bucklodge Branch
Seneca Creek	5.9/Mouth of Great Seneca Creek
Great Seneca Creek	____/Head of Great Seneca Creek near Damascus, Md.
Great Seneca Creek	17.7/Bridge, Md. Highway #124
Great Seneca Creek	16.9/Mouth of Magruder Branch
Magruder Branch	____/Head of Magruder Branch
Magruder Branch	0.0/Mouth of Magruder Branch
Great Seneca Creek	16.9/Mouth of Magruder Branch
Great Seneca Creek	15.0/Mouth of Wildcat Branch
Wildcat Branch	____/Head of Wildcat Branch
Wildcat Branch	0.0/Mouth of Wildcat Branch
Great Seneca Creek	15.0/Mouth of Wildcat Branch
Great Seneca Creek	13.6/Mouth of Goshen Branch
Goshen Branch	____/Head of Goshen Branch
Goshen Branch	2.5/Bridge, Md. Highway #124
Goshen Branch	0.0/Mouth of Goshen Branch
Great Seneca Creek	13.6/Mouth of Goshen Branch

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Great Seneca Creek	13.5/Bridge, Md. Highway #420
Great Seneca Creek	10.9/Mouth of Cabin Branch
Cabin Branch	___/Head of Cabin Branch
Cabin Branch	2.2/Bridge, Secondary Road
Cabin Branch	0.0/Mouth of Cabin Branch
Great Seneca Creek	10.9/Mouth of Cabin Branch
Great Seneca Creek	9.8/Mouth of Whetstone Run
Whetstone Run	___/Head of Whetstone Run
Whetstone Run	0.0/Mouth of Whetstone Run
Great Seneca Creek	9.8/Mouth of Whetstone Run
Great Seneca Creek	9.6/Bridge, Md. Highway #355
Great Seneca Creek	9.6/Bridge, U. S. Highway #240
Great Seneca Creek	8.3/Pumping Station near Gaithersburg
Great Seneca Creek	8.3/Bridge, B & O R.R.
Great Seneca Creek	___/Gaging Station near Gaithersburg, Md. (D. A. 41.0)
Great Seneca Creek	___/Gaging Station near Old Germantown, Md. (D. A. 43.8)
Great Seneca Creek	7.7/Bridge, Md. Highway #117
Great Seneca Creek	6.5/Mouth of Gunners Branch
Gunners Branch	___/Head of Gunners Branch
Gunners Branch	2.4/Bridge, U. S. Highway #240
Gunners Branch	1.2/Bridge, B & O R.R.
Gunners Branch	0.7/Bridge, Md. Highway #117 near Old Germantown, Md. (D.A. 2.92)
Gunners Branch	0.0/Mouth of Gunners Branch
Great Seneca Creek	6.5/Mouth of Gunners Branch
Great Seneca Creek	5.6/Mouth of Long Draught Branch
Long Draught Branch	___/Head of Long Draught Branch
Long Draught Branch	3.8/Bridge, U. S. Highway #240
Long Draught Branch	3.7/Bridge, Md. Highway #124
Long Draught Branch	0.0/Mouth of Long Draught Branch
Great Seneca Creek	5.6/Mouth of Long Draught Branch
Great Seneca Creek	5.3/Bridge, Riffle Ford Road
Great Seneca Creek	2.8/Bridge, Md. Highway #118
Great Seneca Creek	0.0/Mouth of Great Seneca Creek (D.A. 62.6)
Seneca Creek	5.9/Mouth of Great Seneca Creek
Seneca Creek	5.8/Gaging Station at Dawsonville, Md. (D. A. 101.4)
Seneca Creek	2.8/Mouth of Dry Seneca Creek
Dry Seneca Creek	___/Head of Dry Seneca Creek
Dry Seneca Creek	3.9/Bridge, Md. Highway #107
Dry Seneca Creek	0.4/Bridge, Montevideo Road
Dry Seneca Creek	0.0/Mouth of Dry Seneca Creek (D.A. 19.2)
Seneca Creek	2.8/Mouth of Dry Seneca Creek
Seneca Creek	2.0/Junction with Mill Race
Seneca Creek	0.8/Bridge, Md. Highway #112

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Seneca Creek	0.75/Junction with Mill Race
Seneca Creek	0.7/Sampling Station, D. C. Department of Public Health
Seneca Creek	0.0/Mouth of Senena Creek (D. A. 129.3)
POTOMAC RIVER	133.9/Mouth of Seneca Creek
POTOMAC RIVER	133.4/Downstream end of Lowes Island, Va.
POTOMAC RIVER	133.4/Mouth of Old Sugarland Run
Old Sugarland Run	1.8/Head of Old Sugarland Run
Old Sugarland Run	0.5/Sampling Station, D.C. Dept. Public Health
Old Sugarland Run	___/Outfall, Herndon, Va.
Old Sugarland Run	0.0/Mouth of Old Sugarland Run
POTOMAC RIVER	133.4/Mouth of Old Sugarland Run
POTOMAC RIVER	132.9/County Line, Upstream Loudoun Co., Va. Downstream - Fairfax Co., Va. and Montgomery Co., Md.
POTOMAC RIVER	131.4/Mouth of Muddy Branch, Md.
Muddy Branch	___/Head of Muddy Branch
Muddy Branch	11.4/Bridge, Md. Highway #355
Muddy Branch	10.4/Bridge, U. S. Highway #240
Muddy Branch	10.0/Outfall, Gaithersburg
Muddy Branch	9.2/Bridge, Muddy Branch Road
Muddy Branch	7.4/Bridge, Md. Highway #28
Muddy Branch	7.35/Inlet of Inspiration Lake
Muddy Branch	5.6/Mouth of Rich Branch
Rich Branch	___/Head of Rich Branch
Rich Branch	1.0/Bridge, Duffief Mill Road
Rich Branch	0.0/Mouth of Rich Branch
Muddy Branch	5.6/Mouth of Rich Branch
Muddy Branch	4.0/Bridge, Jones Lane
Muddy Branch	___/Bridge, Esworthy Road
Muddy Branch	0.5/Bridge, River Road
Muddy Branch	0.5/Sampling Station, D.C. Dept. of Public Health
Muddy Branch	0.0/Mouth of Muddy Branch (D.A. 19.2)
POTOMAC RIVER	131.4/Mouth of Muddy Branch
POTOMAC RIVER	130.7/Mouth of Nichols Run, Va.
Nichols Run	___/Head of Nichols Run
Nichols Run	1.5/Mouth of Jefferson Branch
Jefferson Branch	___/Head of Jefferson Branch
Jefferson Branch	0.0/Mouth of Jefferson Branch
Nichols Run	1.5/Mouth of Jefferson Branch
Nichols Run	0.0/Mouth of Nichols Run
POTOMAC RIVER	130.7/Mouth of Nichols Run
POTOMAC RIVER	129.2/Mouth of Watts Branch
Watts Branch	___/Head of Watts Branch
Watts Branch	9.6/Bridge, U. S. Highway #240 at Rockville
Watts Branch	9.5/Bridge, Md. Highway #28

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Watts Branch	9.4/Gaging Station at Rockville, Md. (D.A.3.7)
Watts Branch	8.3/Bridge, Scott Drive
Watts Branch	4.9/Mouth of Kilgour Branch
Kilgour Branch	___/Head of Kilgour Branch
Kilgour Branch	0.0/Mouth of Kilgour Branch
Watts Branch	4.9/Mouth of Kilgour Branch
Watts Branch	4.0/Mouth of Piney Branch
Piney Branch	___/Head of Piney Branch
Piney Branch	3.4/Bridge, Glen Mill Road
Piney Branch	2.1/Bridge, Glen Mill Road
Piney Branch	0.3/Bridge, Glen Road
Piney Branch	0.0/Mouth of Piney Branch
Watts Branch	4.0/Mouth of Piney Branch
Watts Branch	3.5/Bridge, Piney Meetinghouse Rd.
Watts Branch	0.75/Bridge, Md. Highway #190
Watts Branch	0.7/Mouth of Sandy Branch
Sandy Branch	___/Head of Sandy Branch
Sandy Branch	4.0/Bridge, Travilah Road
Sandy Branch	2.4/Bridge, Glen Road
Sandy Branch	1.3/Mouth of Greenbrier Branch
Greenbrier Branch	___/Head of Greenbrier Branch
Greenbrier Branch	0.7/Bridge, Glen Road
Greenbrier Branch	0.0/Mouth of Greenbrier Branch
Sandy Branch	1.3/Mouth of Greenbrier Branch
Sandy Branch	0.05/Bridge, Md. Highway #190
Sandy Branch	0.0/Mouth of Sandy Branch (D.A. 5.6)
Watts Branch	0.7/Mouth of Sandy Branch
Watts Branch	0.5/Sampling Station, D. C. Dept. Public Health
Watts Branch	0.0/Mouth of Watts Branch (D.A. 22.3)
POTOMAC RIVER	129.2/Mouth of Watts Branch
POTOMAC RIVER	127.3/Mouth of Cool Spring Branch
Cool Spring Branch	___/Head of Cool Spring Branch
Cool Spring Branch	0.2/Chesapeake & Ohio Canal
Cool Spring Branch	0.0/Mouth of Cool Spring Branch
POTOMAC RIVER	127.3/Mouth of Cool Spring Branch
POTOMAC RIVER	126.5/Dam, Great Falls
POTOMAC RIVER	126.3/Gaging Station at Great Falls, Md. (D. A. 11,460)
POTOMAC RIVER	126.3/Upper end Rural Water District
POTOMAC RIVER	126.3/Sampling Station, Washington Aqueduct
POTOMAC RIVER	126.0/Mouth of Mine Run Branch, Va.
Mine Run Branch	___/Head of Mine Run Branch
Mine Run Branch	0.7/Bridge, River Bend Road
Mine Run Branch	0.0/Mouth of Mine Run Branch
POTOMAC RIVER	126.0/Mouth of Mine Run Branch

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
POTOMAC RIVER	124.1/Mouth of Difficult Run, Va.
Difficult Run	___/Head of Difficult Run
Difficult Run	13.8/Gaging Station near Fairfax, Va. (D. A. 4.29)
Difficult Run	11.3/Mouth of Rocky Branch
Rocky Branch	___/Head of Rocky Branch
Rocky Branch	0.0/Mouth of Rocky Branch
Difficult Run	11.3/Mouth of Rocky Branch
Difficult Run	11.0/Bridge, Vale Road
Difficult Run	9.5/Mouth of Little Difficult Run
Little Difficult Run	___/Head of Little Difficult Run
Little Difficult Run	0.0/Mouth of Little Difficult Run
Difficult Run	9.5/Mouth of Little Difficult Run
Difficult Run	8.1/Bridge, Hunter Mill Road
Difficult Run	7.6/Bridge, Washington & Old Dominion R.R.
Difficult Run	5.5/Bridge, Crowell Road
Difficult Run	4.6/Mouth of Wolftrap Creek
Wolftrap Creek	___/Head of Wolftrap Creek
Wolftrap Creek	0.0/Mouth of Wolftrap Creek
Difficult Run	4.6/Mouth of Wolftrap Creek
Difficult Run	4.3/Bridge, Va. Highway #7
Difficult Run	4.1/Mouth of Colvin Run
Colvin Run	___/Head of Colvin Run
Colvin Run	0.0/Mouth of Colvin Run
Difficult Run	4.1/Mouth of Colvin Run
Difficult Run	3.2/Mouth of Captain Hickory Run
Captain Hickory Run	___/Head of Captain Hickory Run
Captain Hickory Run	0.0/Mouth of Captain Hickory Run
Difficult Run	3.2/Mouth of Captain Hickory Run
Difficult Run	2.5/Bridge, Leigh Mill Road
Difficult Run	1.4/Bridge, Old Dominion Drive
Difficult Run	1.0/Sampling Station, D.C. Dept. Public Health
Difficult Run	0.8/Bridge, Va. Highway #193
Difficult Run	0.0/Mouth of Difficult Run
POTOMAC RIVER	124.1/Mouth of Difficult Run
POTOMAC RIVER	122.5/Mouth of Bullneck Run, Va.
Bullneck Run	2.4/Head of Bullneck Run, Va.
Bullneck Run	1.9/Bridge, Old Dominion Drive
Bullneck Run	1.0/Bridge, Va. Highway #193
Bullneck Run	0.0/Mouth of Bullneck Run
POTOMAC RIVER	122.5/Mouth of Bullneck Run
POTOMAC RIVER	121.95/Mouth of Scott Run, Va.
Scott Run	___/Head of Scott Run
Scott Run	2.9/Bridge, Lewinsville Road
Scott Run	2.1/Bridge, Old Dominion Drive
Scott Run	0.9/Bridge, Va. Highway #193
Scott Run	0.0/Mouth of Scott Run
POTOMAC RIVER	121.95/Mouth of Scott Run, Va.

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
POTOMAC RIVER	121.7/Naval Model Testing Station, Corderock, Md.
POTOMAC RIVER	120.3/Mouth of Dead Run, Va.
Dead Run	2.9/Head of Dead Run
Dead Run	2.5/Bridge, Old Dominion Drive
Dead Run	1.3/Bridge, Va. Highway #193
Dead Run	0.0/Mouth of Dead Run
POTOMAC RIVER	120.3/Mouth of Dead Run, Va.
POTOMAC RIVER	/Lower end of Rural Water District
POTOMAC RIVER	120.2/Mouth of Rock Run, Md.
Rock Run	6.1/Head of Rock Run
Rock Run	5.8/Bridge, Md. Highway #190
Rock Run	5.5/Bridge, Md. Highway #189
Rock Run	1.0/Bridge, MacArthur Blvd.
Rock Run	0.7/Sampling Station, D. C. Dept. Public Health
Rock Run	0.2/Chesapeake & Ohio Canal
Rock Run	0.0/Mouth of Rock Run
POTOMAC RIVER	120.2/Mouth of Rock Run
POTOMAC RIVER	119.6/Mouth of Turkey Run, Va.
Turkey Run	___/Head of Turkey Run
Turkey Run	0.0/Mouth of Turkey Run
POTOMAC RIVER	119.6/Mouth of Turkey Run
POTOMAC RIVER	119.0/Mouth of Cabin John Creek, Md.
Cabin John Creek	___/Head of Cabin John Creek
Cabin John Creek	___/Intake, Rockville, Md.
Cabin John Creek	10.7/Mouth of Unnamed Tributary
Unnamed Tributary	___/Head of Unnamed Tributary
Unnamed Tributary	0.5/Outfall, Rockville, Md.
Unnamed Tributary	0.0/Mouth of Unnamed Tributary
Cabin John Creek	10.7/Mouth of Unnamed Tributary
Cabin John Creek	10.0/Bridge, U. S. Highway #240
Cabin John Creek	9.7/Mouth of Bogley Branch
Bogley Branch	___/Head of Bogley Branch
Bogley Branch	0.5/Bridge, Seven Locks Road
Bogley Branch	0.0/Mouth of Bogley Branch
Cabin John Creek	9.7/Mouth of Bogley Branch
Cabin John Creek	8.3/Bridge, Lux Lane
Cabin John Creek	7.7/Mouth of Snakeden Branch
Snakeden Branch	___/Head of Snakeden Branch
Snakeden Branch	0.8/Bridge, Tuckerman Lane
Snakeden Branch	0.4/Bridge, Seven Locks Road
Snakeden Branch	0.0/Mouth of Snakeden Branch
Cabin John Creek	7.7/Mouth of Snakeden Branch
Cabin John Creek	5.6/Mouth of Buck Branch
Buck Branch	___/Head of Buck Branch
Buck Branch	2.8/Bridge, Tuckerman Lane
Buck Branch	1.4/Bridge, Bells Mill Road
Buck Branch	0.0/Mouth of Buck Branch
Cabin John Creek	5.6/Mouth of Buck Branch

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Cabin John Creek	4.7/Bridge, Bradley Blvd.
Cabin John Creek	3.4/Bridge, Md. Highway #190
Cabin John Creek	2.7/Bridge, Seven Locks Road
Cabin John Creek	2.6/Mouth of Thomas Branch
Thomas Branch	___/Head of Thomas Branch
Thomas Branch	2.8/Bridge, Bells Mill Road
Thomas Branch	1.6/Bridge, Md. Highway #191
Thomas Branch	0.05/Bridge, Md. Highway #190
Thomas Branch	0.0/Mouth of Thomas Branch
Cabin John Creek	2.6/Mouth of Thomas Branch
Cabin John Creek	1.8/Mouth of Booze Creek
Booze Creek	___/Head of Booze Creek
Booze Creek	0.8/Bridge, Md. Highway #190
Booze Creek	0.0/Mouth of Booze Creek
Cabin John Creek	1.8/Mouth of Booze Creek
Cabin John Creek	0.5/Bridge, MacArthur Blvd.
Cabin John Creek	0.3/Chesapeake & Ohio Canal
Cabin John Creek	0.3/Sampling Station, D.C. Dept. Public Health
Cabin John Creek	0.0/Mouth of Cabin John Creek (D. A. 25.6)
POTOMAC RIVER	119.0/Mouth of Cabin John Creek
POTOMAC RIVER	118.7/Mouth of Minnehaha Branch
Minnehaha Branch	___/Head of Minnehaha Branch
Minnehaha Branch	1.5/Bridge, Goldsboro Road
Minnehaha Branch	1.4/Bridge, Md. Highway #190
Minnehaha Branch	0.3/Bridge, MacArthur Blvd.
Minnehaha Branch	0.1/Chesapeake & Ohio Canal
Minnehaha Branch	0.0/Mouth of Minnehaha Branch
POTOMAC RIVER	118.7/Mouth of Minnehaha Branch
POTOMAC RIVER	118.4/Gaging Station near Washington, D. C. (D. A. 11,560.0)
POTOMAC RIVER	118.4/Outfall, Sewage Disposal in Va. - 0.3 miles inland from gaging station
POTOMAC RIVER	117.4/Little Falls Dam
POTOMAC RIVER	116.3/Mouth of Little Falls Branch, Md.
Little Falls Branch	___/Head of Little Falls Branch
Little Falls Branch	3.0/Bridge, River Road (Md. #190)
Little Falls Branch	2.4/Mouth of Willet Branch
Willet Branch	___/Head of Willet Branch
Willet Branch	0.8/Bridge, B & O R.R.
Willet Branch	0.6/Bridge, Md. Highway #190
Willet Branch	0.2/Bridge, B & O R.R.
Willet Branch	0.0/Mouth of Willet Branch
Little Falls Branch	2.4/Mouth of Willet Branch
Little Falls Branch	2.1/Bridge, Md. Highway #396
Little Falls Branch	___/Gaging Station near Bethesda, Md. (D.A. 4.1)
Little Falls Branch	0.9/Bridge, B & O R.R.
Little Falls Branch	0.8/Bridge, MacArthur Blvd.

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Little Falls Branch	0.2/Chesapeake & Ohio Canal
Little Falls Branch	0.0/Mouth of Little Falls Branch
POTOMAC RIVER	116.3/Mouth of Little Falls Branch
POTOMAC RIVER	116.29/State and County Line, Upstream - Montgomery Co., Md. Downstream - District of Columbia
POTOMAC RIVER	___/Intake, Washington, D. C.
POTOMAC RIVER	115.9/Bridge, Chain Bridge
POTOMAC RIVER	115.9/Gaging Station, at Chain Bridge, D. C. (D. A. 11,570)
POTOMAC RIVER	115.8/Mouth of Pimmit Run, Va.
Pimmit Run	___/Head of Pimmit Run
Pimmit Run	7.6/Outfall, Pimmit Hills
Pimmit Run	7.1/Outfall, Sewage Disposal Pimmit Hills
Pimmit Run	5.9/Bridge, Westmoreland Road
Pimmit Run	5.5/Outfall, Sewage Disposal
Pimmit Run	4.5/Bridge, Va. Highway #309
Pimmit Run	3.4/Mouth of Bryan Branch
Bryan Branch	___/Head of Bryan Branch
Bryan Branch	0.0/Mouth of Bryan Branch
Pimmit Run	3.4/Mouth of Bryan Branch
Pimmit Run	1.9/Bridge, Kirby Road
Pimmit Run	1.8/Mouth of Little Pimmit Run
Little Pimmit Run	1.8/Head of Little Pimmit Run
Little Pimmit Run	0.0/Mouth of Little Pimmit Run
Pimmit Run	1.8/Mouth of Little Pimmit Run
Pimmit Run	0.7/Sampling Station, D.C. Dept. Public Health
Pimmit Run	0.5/County Line, Upstream - Fairfax Co., Downstream - Arlington Co., Va.
Pimmit Run	0.1/Bridge, Va. Highway #120
Pimmit Run	0.0/Mouth of Pimmit Run
POTOMAC RIVER	115.8/Mouth of Pimmit Run
POTOMAC RIVER	115.5/Mouth of Gulf Branch, Va.
Gulf Branch	___/Head of Gulf Branch
Gulf Branch	0.6/Bridge, Military Road
Gulf Branch	0.0/Mouth of Gulf Branch
POTOMAC RIVER	115.5/Mouth of Gulf Branch, Va.
POTOMAC RIVER	115.1/Mouth of Donaldson Run
Donaldson Run	___/Head of Donaldson Run
Donaldson Run	0.9/Bridge, Military Road
Donaldson Run	0.0/Mouth of Donaldson Run
POTOMAC RIVER	115.1/Mouth of Donaldson Run
POTOMAC RIVER	115.0/Intake & Outfall, Potomac Electric Power Co., Buzzard Point Plant
POTOMAC RIVER	114.1/Georgetown Reservoir
POTOMAC RIVER	113.8/Mouth of Windy Run, Va.
Windy Run	0.6/Head of Windy Run

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREA FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Windy Run	0.0/Mouth of Windy Run
POTOMAC RIVER	113.8/Mouth of Windy Run
POTOMAC RIVER	113.2/Mouth of Spout Run
Spout Run	___/Head of Spout Run
Spout Run	1.0/Bridge, Lee Highway
Spout Run	0.8/Bridge, Va. Highway #124
Spout Run	0.7/Bridge, Washington & Old Dominion R.R.
Spout Run	0.1/Bridge, Va. Highway #124
Spout Run	0.0/Mouth of Spout Run
POTOMAC RIVER	113.2/Mouth of Spout Run
POTOMAC RIVER	112.6/Bridge, Key Bridge (U.S. #29)
POTOMAC RIVER	112.3/Gaging Station near Georgetown University
POTOMAC RIVER	111.9/Mouth of Rock Creek, D. C.
Rock Creek	___/Head of Rock Creek, Md.
Rock Creek	11.6/Bridge, B & O R.R.
Rock Creek	11.3/Mouth of Coquelin Run
Coquelin Run	___/Head of Coquelin Run
Coquelin Run	1.5/Bridge, Md. Highway #410
Coquelin Run	0.9/Bridge, Md. Highway #193
Coquelin Run	0.2/Bridge, Md. Highway #186
Coquelin Run	0.0/Mouth of Coquelin Run
Rock Creek	11.3/Mouth of Coquelin Run
Rock Creek	11.1/Bridge, Md. Highway #410
Rock Creek	10.0/State and County Line, Upstream - Montgomery Co., Md., Downstream - District of Columbia
Rock Creek	9.3/Mouth of Fenwick Branch
Fenwick Branch	___/Head of Fenwick Branch, Md.
Fenwick Branch	1.0/Bridge, Md. Highway #410
Fenwick Branch	0.9/State and County Line, Upstream - Montgomery Co., Md., Downstream - District of Columbia
Fenwick Branch	0.0/Mouth of Fenwick Branch
Rock Creek	9.3/Mouth of Fenwick Branch
Rock Creek	9.1/Sampling Station, D.C. Dept. of Public Health
Rock Creek	8.6/Sampling Stateon, D.C. Dept. Public Health
Rock Creek	8.0/Gaging Station at Sherrill Drive, D.C. (D. A. 62.2)
Rock Creek	7.6/Sampling Station, D.C. Dept. Public Health
Rock Creek	6.8/Bridge, Military Road
Rock Creek	5.1/Mouth of Broad Branch
Broad Branch	___/Head of Broad Branch
Broad Branch	0.0/Mouth of Broad Branch
Rock Creek	5.1/Mouth of Broad Branch
Rock Creek	4.8/Dam
Rock Creek	4.2/Mouth of Piney Branch
Piney Branch	0.5/Head of Piney Branch

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Piney Branch	0.0/Mouth of Piney Branch
Rock Creek	4.2/Mouth of Piney Branch
Rock Creek	4.0/Bridge, Porter Street
Rock Creek	3.9/Sampling Station, D.C. Dept. Public Health
Rock Creek	2.4/Bridge, Alt. U.S. Highway #240
Rock Creek	1.8/Bridge, U. S. Highway #240
Rock Creek	0.6/Sampling Station, D.C. Dept. Public Health
Rock Creek	0.5/Bridge, M Street
Rock Creek	0.3/Junction with end of Chesapeake & Ohio Canal
Rock Creek	0.2/Bridge, Whitehurst Freeway
Rock Creek	0.0/Mouth of Rock Creek (D. A. 76.5)
POTOMAC RIVER	111.9/Mouth of Rock Creek
POTOMAC RIVER	111.8/Theodore Roosevelt Island - Island splits Potomac River into Georgetown Channel on the D.C. side and the Little River on the Virginia side
POTOMAC RIVER	111.4/Upstream end of Columbia Island and of boundary channel; this point is 0.4 miles upstream of Memorial Bridge
POTOMAC RIVER	111.0/Bridge, Memorial Bridge (U.S. #50)
POTOMAC RIVER	110.2/Downstream end of Columbia Island and of boundary channel
POTOMAC RIVER	110.1/Tidal Basin in D. C.
POTOMAC RIVER	___/Bridge, Old Highway Bridge
POTOMAC RIVER	109.9/Bridge, East 14th St.
POTOMAC RIVER	___/Bridge, Pa. R.R.
POTOMAC RIVER	109.5/Gaging Station near Washington National Airport
POTOMAC RIVER	109.0/Waterfowl Sanctuary in Va.
POTOMAC RIVER	107.8/Mouth of Anacostia River, D. C.
Anacostia River	8.6/Head of Anacostia River, Md.
Anacostia River	8.6/Mouth of Northeast Branch
Northeast Branch	3.6/Head of Northeast Branch
Northeast Branch	3.6/Mouth of Indian Creek
Indian Creek	9.0/Head of Indian Creek
Indian Creek	7.0/Bridge, Ammendale Road
Indian Creek	6.1/Bridge, U. S. Highway #2
Indian Creek	6.1/Bridge, B & O R.R.
Indian Creek	5.8/Bridge, Swampoodle Road
Indian Creek	5.4/Bridge, Old Baltimore Pike
Indian Creek	5.0/Bridge, Powder Mill Rd.
Indian Creek	4.2/Bridge, Sunnyside Ave.
Indian Creek	3.6/Mouth of Beaverdam Creek
Beaverdam Creek	___/Head of Beaverdam Creek
Beaverdam Creek	2.6/Bridge, Balto. Wash. Pkwy.
Beaverdam Creek	2.5/Mouth of Beck Branch

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Beck Branch	___/Head of Beck Branch
Beck Branch	0.2/Bridge, Balto. Wash. Pkwy
Beck Branch	0.0/Mouth of Beck Branch
Beaverdam Creek	2.5/Mouth of Beck Branch
Beaverdam Creek	1.4/Bridge, Research Rd.
Beaverdam Creek	0.3/Outfall, National Agric. Research Center
Beaverdam Creek	0.05/Bridge, Edmonston Ave.
Beaverdam Creek	0.0/Mouth of Beaverdam Creek
Indian Creek	3.6/Mouth of Beaverdam Creek
Indian Creek	3.0/Outfall, Greenbelt, Md.
Indian Creek	1.9/Bridge, Branchville Rd.
Indian Creek	1.8/Bridge, Greenbelt Road
Indian Creek	1.6/Bridge, B & O R.R.
Indian Creek	1.3/Bridge, Berwyn Road
Indian Creek	___/Outfalls, (2) Mineral Pigment Corporation
Indian Creek	___/Outfalls, (3) A. H. Smith Sand & Gravel Co.
Indian Creek	___/Outfall, Contee Sand & Gravel Co.
Indian Creek	___/Outfall, Uno Excavating Co.
Indian Creek	0.0/Mouth of Indian Creek (D.A. 29.1)
Northeast Branch	3.6/Mouth of Indian Creek
Northeast Branch	3.6/Mouth of Paint Branch
Paint Branch	___/Head of Paint Branch
Paint Branch	12.7/Bridge, Peach Orchard Rd.
Paint Branch	11.8/Bridge, Briggs Chaney Rd.
Paint Branch	10.5/Bridge, Fairland Road
Paint Branch	8.2/Bridge, Md. Highway #196
Paint Branch	7.5/Outfall, U. S. Naval Reservation Ordnance Laboratory
Paint Branch	___/Intake & Outfall, McCeney Sand & Gravel Co., White Oak, Md.
Paint Branch	6.2/County Line, Upstream - Montgomery, Downstream - Prince George's
Paint Branch	5.4/Bridge, Powder Mill Road
Paint Branch	2.9/Mouth of Little Paint Branch
Little Paint Branch	___/Head of Little Paint Branch near Burtonsville, Mgt. Co.
Little Paint Branch	4.2/Bridge, Fairland-Beltsville Rd.
Little Paint Branch	3.5/Bridge, Powder Mill Rd.
Little Paint Branch	2.1/Bridge, Sellman Road
Little Paint Branch	1.5/Outfall, Prince Georges Sand & Gravel Co.
Little Paint Branch	0.8/Bridge, Cherry Hill Road
Little Paint Branch	0.0/Mouth of Little Paint Branch (D. A. 10.8)
Paint Branch	2.9/Mouth of Little Paint Branch

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Paint Branch	2.5/Bridge, Md. Highway #193
Paint Branch	2.3/Bridge, Metzerott Road
Paint Branch	1.5/Bridge, U. S. Highway #1
Paint Branch	1.0/Bridge, D. C. Transit
Paint Branch	0.7/Bridge, B & O R.R.
Paint Branch	0.0/Mouth of Paint Branch (D.A. 31.5)
Northeast Branch	3.6/Mouth of Paint Branch
Northeast Branch	3.3/Bridge, Calvert Road
Northeast Branch	2.6/Mouth of Brier Ditch
Brier Ditch	____/Head of Brier Ditch
Brier Ditch	1.5/Bridge, Auburn Avenue
Brier Ditch	1.0/Bridge, Balto. Wash. Pkwy.
Brier Ditch	0.1/Bridge, Edmonston Ave.
Brier Ditch	0.0/Mouth of Brier Ditch
Northeast Branch	2.6/Mouth of Brier Ditch
Northeast Branch	1.7/Bridge, Md. Highway #412
Northeast Branch	1.75/Gaging Station at Riverdale, Md. (D.A. 72.8)
Northeast Branch	0.5/Bridge, B & O R.R.
Northeast Branch	0.3/Pumping Station
Northeast Branch	0.2/Bridge, U. S. Highway alt. #2
Northeast Branch	0.0/Mouth of Northeast Branch (D.A. 75.6)
Anacostia River	8.6/Mouth of Northeast Branch
Anacostia River	8.6/Mouth of Northwest Branch
Northwest Branch	____/Head of Northwest Branch
Northwest Branch	12.3/Gaging Station, Hyattsville, Md.
Northwest Branch	6.6/County Line, Upstream - Montgomery Downstream - Prince George's
Northwest Branch	6.5/Bridge, Md. Highway #650
Northwest Branch	5.6/Bridge, Old Riggs Road
Northwest Branch	4.8/Bridge, Md. Highway #193
Northwest Branch	3.4/Bridge, Md. Highway #410
Northwest Branch	2.9/Bridge, Ager Road
Northwest Branch	2.5/Mouth of Sligo Creek
Sligo Creek	____/Head of Sligo Creek
Sligo Creek	4.7/Bridge, Md. Highway #320
Sligo Creek	3.5/Bridge, Md. Highway #195
Sligo Creek	3.3/County Line, Upstream - Montgomery, Downstream - Prince George's
Sligo Creek	2.3/Mouth of Long Branch
Long Branch	____/Head of Long Branch
Long Branch	1.5/Bridge, Piney Branch Rd.
Long Branch	0.5/Bridge, Md. Highway #195; County Line, Upstream - Montgomery, Downstream - Prince George's
Long Branch	0.0/Mouth of Long Branch
Sligo Creek	2.3/Mouth of Long Branch

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Sligo Creek	2.2/Bridge, Md. Highway #650
Sligo Creek	1.4/Bridge, Md. Highway #410
Sligo Creek	1.1/Bridge, Md. Highway #212
Sligo Creek	0.0/Mouth of Sligo Creek (D. A. 13.3)
Northwest Branch	2.5/Mouth of Sligo Creek
Northwest Branch	1.8/Bridge, Md. Highway #500
Northwest Branch	1.5/Gaging Station near Colesville, Md.
Northwest Branch	1.0/Bridge, Md. Highway #208
Northwest Branch	0.3/Bridge, U. S. Highway #2
Northwest Branch	0.2/Bridge, B & O R.R.
Northwest Branch	___/Gaging Station at Bladensburg (D.A. 52)
Northwest Branch	___/Outfall, McCeney Sand & Gravel Co.
Northwest Branch	___/Outfall, White Oak Naval Ordnance Laboratory
Northwest Branch	___/Intake, Washington Suburban Sanitary District
Northwest Branch	0.0/Mouth of Northwest Branch (D.A. 53.2)
Anacostia River	8.6/Mouth of Northwest Branch
Anacostia River	8.2/Bridge, U. S. #50 & U. S. Alt. #1
Anacostia River	8.0/Pumping Station at Bladensburg, Md.
Anacostia River	7.6/Outfall, Sewage Disposal
Anacostia River	7.2/Sampling Station, D.C. Dept. of Sanitary Engineering - D.C. Line Bridge
Anacostia River	6.65/State Line, Upstream - Maryland Downstream - District of Columbia
Anacostia River	6.6/Bridge, Balto. Wash. Parkway
Anacostia River	6.5/Bridge, Pa. R.R.
Anacostia River	6.5/Mouth of Beaverdam Creek, D. C.
Beaverdam Creek	___/Head of Beaverdam Creek, Md.
Beaverdam Creek	5.0/Bridge, Pa. R.R.
Beaverdam Creek	4.6/Bridge, Pa. R.R.
Beaverdam Creek	3.5/Bridge, Md. Highway #202
Beaverdam Creek	3.25/Mouth of Cattail Branch
Cattail Branch	___/Head of Cattail Branch
Cattail Branch	2.9/Bridge, Brightseat Road
Cattail Branch	2.0/Bridge, Md. Highway #202
Cattail Branch	1.2/Bridge, Md. Highway #704
Cattail Branch	0.0/Mouth of Cattail Branch
Beaverdam Creek	3.25/Mouth of Cattail Branch
Beaverdam Creek	2.0/Bridge, Columbia Park Rd.
Beaverdam Creek	1.9/Mouth of Cabin Branch
Cabin Branch	___/Head of Cabin Branch
Cabin Branch	1.9/Bridge, 77th St.
Cabin Branch	1.4/Bridge, George Palmer Hwy.
Cabin Branch	1.0/Bridge, Sheriff Road
Cabin Branch	0.0/Mouth of Cabin Branch
Beaverdam Creek	1.9/Mouth of Cabin Branch

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Beaverdam Creek	1.2/Bridge, Pa. R.R.
Beaverdam Creek	1.1/Bridge, B & O R.R.
Beaverdam Creek	0.6/Bridge, Md. Highway #201
Beaverdam Creek	0.2/State Line, Upstream - Maryland Downstream - District of Columbia
Beaverdam Creek	___/Gaging Station, Kenilworth Ave. (D. A. 14.7)
Beaverdam Creek	0.0/Mouth of Beaverdam Creek
Anacostia River	6.5/Mouth of Beaverdam Creek
Anacostia River	5.6/Kenilworth Aquatic Gardens
Anacostia River	5.5/Mouth of Hickey Run
Hickey Run	1.0/Head of Hickey Run
Hickey Run	0.0/Mouth of Hickey Run
Anacostia River	5.5/Mouth of Hickey Run
Anacostia River	5.4/Upper end, Lake Kingman
Anacostia River	5.3/Mouth of Watts Branch
Watts Branch	___/Head of Watts Branch, Md.
Watts Branch	3.2/State Line, Upstream - Maryland Downstream - District of Columbia
Watts Branch	1.2/Bridge, Pa. R.R.
Watts Branch	1.1/Bridge, Kenilworth Avenue
Watts Branch	0.0/Mouth of Watts Branch
Anacostia River	5.3/Mouth of Watts Branch
Anacostia River	5.3/Sampling Station, D. C. Dept. of Sanitary Engineering, Benning Road Bridge
Anacostia River	4.8/Sampling Station, D. C. Dept. Sanitary Engineering, East Capitol St. Bridge
Anacostia River	4.6/Bridge, Benning Road
Anacostia River	4.1/Bridge, East Capitol Bridge
Anacostia River	3.6/Lower end, Lake Kingman
Anacostia River	3.6/Sampling Station, D. C. Dept. Sanitary Engineering, Pa. Ave. Bridge
Anacostia River	3.3/Bridge, Pa. R.R.
Anacostia River	2.9/Bridge, Sousa Bridge
Anacostia River	2.8/Sampling Station, D. C. Dept. Sanitary Engineering, 11th St. Bridge
Anacostia River	2.1/Bridge, Anacostia Bridge
Anacostia River	2.0/Sampling Station, D. C. Dept. Sanitary Engineering, S. Capitol St. Bridge
Anacostia River	1.4/Bridge, Capitol St. Bridge
Anacostia River	1.1/Sampling Station, D. C. Dept. Sanitary Engineering, Washington Channel
Anacostia River	1.0/Outfall, Smoot Sand & Gravel Plant
Anacostia River	1.0/Outfall, Washington Gas & Light Co.
Anacostia River	0.3/Mouth of Washington Channel
Washington Channel	1.9/Head of Washington Channel

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Washington Channel	1.9/Connection with Tidal Basin
Washington Channel	1.9/Bridge, U. S. #1 & Pa. R.R.
Washington Channel	0.0/Mouth of Washington Channel
Anacostia River	0.3/Mouth of Washington Channel
Anacostia River	___/Outfall, Beltsville Agricultural Research Station
Anacostia River	___/Intake, Metalectro Co., Avondale, Md.
Anacostia River	___/Outfall, Plant Industry Station, Beltsville, Md.
Anacostia River	___/Outfall, Howard Concrete Co., D. C.
Anacostia River	___/Intake & Outfall, Potomac Edison Power Co., Benning Station, D. C.
Anacostia River	0.0/Mouth of Anacostia River (D.A. 169.9)
POTOMAC RIVER	107.8/Mouth of Anacostia River, D. C.
POTOMAC RIVER	107.4/Sampling Station, D.C. Dept. Sanitary Engineering, Geisboro Point
POTOMAC RIVER	106.9/Mouth of Fourmile Run, Va.
Fourmile Run	___/Head of Fourmile Run
Fourmile Run	2.0/Gaging Station at Alexandria, Va.
Fourmile Run	1.9/Bridge, Old Glebe Road
Fourmile Run	1.5/Mouth of Long Branch
Long Branch	___/Head of Long Branch
Long Branch	0.0/Mouth of Long Branch
Fourmile Run	1.5/Mouth of Long Branch
Fourmile Run	1.2/Bridge, Mt. Vernon Ave.
Fourmile Run	1.2/Sampling Station, Arlington Dept. Sanitation, Arlington Ridge Road
Fourmile Run	0.3/Bridge, U. S. Highway #1
Fourmile Run	0.3/Sampling Station, Arlington Dept. Sanitation, Rt. U. S. #1
Fourmile Run	0.1/Bridge, George Washington Memorial Hwy.
Fourmile Run	0.1/Sampling Station, Arlington Dept. Sanitation, Mt. Vernon Blvd.
Fourmile Run	0.0/Mouth of Fourmile Run
POTOMAC RIVER	106.9/Mouth of Fourmile Run, Va.
POTOMAC RIVER	106.0/Sampling Station, D.C. Dept. Sanitary Engineering, above S.T.P.
POTOMAC RIVER	106.0/Outfalls, (2) Smoot Sand & Gravel Co.
POTOMAC RIVER	106.0/Outfall, Corson & Gruman
POTOMAC RIVER	106.0/Outfall, Howard Concrete Co.
POTOMAC RIVER	106.0/Outfall, Super Concrete Co.
POTOMAC RIVER	106.0/Outfall, Arlington Asphalt Co.
POTOMAC RIVER	105.4/Outfall, Naval Research Laboratory
POTOMAC RIVER	105.4/Outfall, Blue Plains S.T.P.
POTOMAC RIVER	105.4/Sampling Station, D.C. Dept. Sanitary Engineering, Opposite S.T.P.
POTOMAC RIVER	105.1/Shepherd Landing, D.C.

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
POTOMAC RIVER	105.1/Sampling Station, D.C. Dept. Sanitary Engineering, below S.T.P.
POTOMAC RIVER	105.0/Sampling Station, Alexandria Sanitation Authority, Agrico Acid Plant
POTOMAC RIVER	104.9/Sampling Station, Alexandria Sanitation Authority, Agrico Fert. Plant
POTOMAC RIVER	104.7/Sampling Station, Alexandria Sanitation Authority, Old Dominion Boat House
POTOMAC RIVER	104.6/Sampling Station, Alexandria Sanitation Authority, Robinson's Dock
POTOMAC RIVER	104.6/Mouth of Oxon Creek, D. C.
Oxon Creek	0.5/Head of Oxon Creek, Md.
Oxon Creek	0.5/Mouth of Oxon Run
Oxon Run	/Head of Oxon Run
Oxon Run	6.4/Bridge, Md. Highway #218
Oxon Run	5.7/Bridge, Md. Highway #5
Oxon Run	5.4/Bridge, Suitland Parkway
Oxon Run	4.2/State and County Line, Upstream - Prince George's Co., Md., Downstream - District of Columbia
Oxon Run	2.9/Bridge, Wheeler Road
Oxon Run	1.5/Bridge, Capitol Street
Oxon Run	1.3/Mouth of Barnaby Run
Barnaby Run	/Head of Barnaby Run, Md.
Barnaby Run	2.1/Bridge, Wheeler Road
Barnaby Run	1.1/State and County Line, Upstream - Prince George's Co., Md., Downstream - District of Columbia
Barnaby Run	0.6/State and County Line, Upstream - District of Columbia, Downstream - Prince George's Co., Md.
Barnaby Run	0.2/Bridge, Md. Highway #210
Barnaby Run	0.2/State Line, Upstream - Md., Downstream - D. C.
Barnaby Run	0.0/Mouth of Barnaby Run
Oxon Run	1.3/Mouth of Barnaby Run
Oxon Run	1.0/State Line, Upstream - D. C., Downstream - Md.
Oxon Run	0.5/Outfall, Washington Sand & Gravel Co.
Oxon Run	0.0/Mouth of Oxon Run (D.A. 13.5)
Oxon Creek	0.5/Mouth of Oxon Run
Oxon Creek	0.25/State Line, Upstream - Md., Downstream - District of Columbia
Oxon Creek	0.0/Mouth of Oxon Creek
POTOMAC RIVER	104.6/Mouth of Oxon Creek, D.C.
POTOMAC RIVER	104.5/Sampling Station, D.C. Dept. Sanitary Engineering, at Fletchers Boat House

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
POTOMAC RIVER	104.4/Sampling Station, Alexandria Sanitation Authority, Naval Gun Factory
POTOMAC RIVER	103.9/Gaging Station at Alexandria, Va.
POTOMAC RIVER	103.9/Intake & Outfall, Virginia Public Service Co.
POTOMAC RIVER	103.9/Intake & Outfall, Braddock Light & Power Co.
POTOMAC RIVER	103.6/State Line, Upstream - D. C., Downstream - Prince George's Co., Md.
POTOMAC RIVER	103.4/Bridge, Capitol Beltway
POTOMAC RIVER	103.2/Mouth of Hunting Creek, Va.
Hunting Creek	1.6/Head of Hunting Creek
Hunting Creek	1.6/Outfall, Huntington, Va.
Hunting Creek	1.4/Mouth of Cameron Run*
Cameron Run	___/Head of Cameron Run
Cameron Run	3.4/Gaging Station near Alexandria, Va.
Cameron Run	3.3/Bridge, Richmond, Fredericksburg, & Potomac R.R.
Cameron Run	1.9/Bridge, Alexandria Sanitation Authority, Quaker Lane
Cameron Run	1.6/Outfall, Huntington, Virginia
Cameron Run	1.5/Mouth of Pike Branch
Pike Branch	___/Head of Pike Branch
Pike Branch	0.0/Mouth of Pike Branch
Cameron Run	1.5/Mouth of Pike Branch
Cameron Run	1.4/Bridge, Va. Highway #241
Cameron Run	1.4/Sampling Station, Alexandria Sanitation Authority, Telegraph Rd.
Cameron Run	0.05/Outfall, Alexandria City, Va.
Cameron Run	0.0/Mouth of Cameron Run
Hunting Creek	1.4/Mouth of Cameron Run
Hunting Creek	1.0/Bridge, U.S. Highway #1
Hunting Creek	0.6/Bridge, George Washington Memorial Pkwy.
Hunting Creek	0.6/Sampling Station, Alexandria Sanitation Authority, Memorial Bridge
Hunting Creek	0.0/Mouth of Hunting Creek
POTOMAC RIVER	103.2/Mouth of Hunting Creek Va.
POTOMAC RIVER	103.1/Sampling Station, D.C. Dept. Sanitary Engineering at Three Sisters Island
POTOMAC RIVER	101.7/Sampling Station, D.C. Dept. Sanitary Engineering, Fort Foote
POTOMAC RIVER	101.6/Sampling Station, D.C. Dept. Sanitary Engineering at Roosevelt Island
POTOMAC RIVER	101.2/Mouth of Unnamed Tributary
Unnamed Tributary	___/Head of Unnamed Tributary

* Cameron Run is boundary between Alexandria City and Fairfax County, Va.

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Unnamed Tributary	1.1/Outfall, New Alexandria, Va.
Unnamed Tributary	0.0/Mouth of Unnamed Tributary
POTOMAC RIVER	101.2/Mouth of Unnamed Tributary, Va.
POTOMAC RIVER	100.7/Sampling Station, D.C. Dept. Sanitary Engineering at Memorial Bridge
POTOMAC RIVER	100.4/Mouth of Broad Creek, Md.
Broad Creek	3.2/Head of Broad Creek
Broad Creek	3.2/Mouth of Carey Branch
Carey Branch	____/Head of Carey Branch
Carey Branch	2.8/Bridge, Livingston Rd.
Carey Branch	2.0/Bridge, Md. Highway #210
Carey Branch	0.4/Bridge, Md. Highway #210
Carey Branch	0.0/Mouth of Carey Branch
Broad Creek	3.2/Mouth of Carey Branch
Broad Creek	3.2/Mouth of Henson Creek
Henson Creek	____/Head of Henson Creek
Henson Creek	7.6/Bridge, Md. Highway #218
Henson Creek	6.1/Outfall, District Sand & Gravel Co.
Henson Creek	6.1/Outfall, Silver Hill Sand & Gravel Co.
Henson Creek	6.1/Outfall, Buffalo Sand & Gravel Co.
Henson Creek	5.9/Bridge, Md. Highway #5
Henson Creek	4.3/Bridge, Temple Road
Henson Creek	3.6/Bridge, Brinkley Road
Henson Creek	1.8/Bridge, Bock Road
Henson Creek	1.45/Bridge, Tucker Road
Henson Creek	1.4/Gaging Station, Oxon Hill, Md. (D.A. 16.7)
Henson Creek	0.0/Mouth of Henson Creek (D.A. 18.2)
Broad Creek	3.2/Mouth of Henson Creek
Broad Creek	2.6/Bridge, Indian Head Road (Md. #210)
Broad Creek	2.0/Mouth of Hunters Mill Branch
Hunters Mill Branch	____/Head of Hunters Mill Branch
Hunters Mill Branch	0.5/Bridge, Md. Highway #210 and Palmer Road
Hunters Mill Branch	0.4/Bridge, Livingstone Road
Hunters Mill Branch	0.0/Mouth of Hunters Mill Branch
Broad Creek	2.0/Mouth of Hunters Mill Branch
Broad Creek	1.9/Bridge, Oxon Hill Road
Broad Creek	0.0/Mouth of Broad Creek (D. A. 30.0)
POTOMAC RIVER	100.4/Mouth of Broad Creek, Md.
POTOMAC RIVER	99.7/Sampling Station, D.C. Dept. Sanitary Engineering at Highway Bridge
POTOMAC RIVER	99.1/Sampling Station, D.C. Dept. Sanitary Engineering at Potomac Park
POTOMAC RIVER	98.3/Mouth of Swan Creek, Md.
Swan Creek	____/Head of Swan Creek

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Swan Creek	0.3/Intake, Pumping Station near Fort Washington National Park
Swan Creek	0.0/Mouth of Swan Creek
POTOMAC RIVER	98.3/Mouth of Swan Creek, Md.
POTOMAC RIVER	98.3/Sampling Station, D.C. Dept. Sanitary Engineering at Harris Point
POTOMAC RIVER	97.8/Sampling Station, D.C. Dept. Sanitary Engineering, Fort Washington
POTOMAC RIVER	97.2/Mouth of Piscataway Creek, Md.
Piscataway Creek	19.3/Head of Piscataway Creek
Piscataway Creek	___/Outfall, Andrews Air Force Base
Piscataway Creek	16.6/Bridge, Woodyard Road
Piscataway Creek	14.4/Mouth of Dower House Pond Branch
Dower House Pond Branch	1.2/Head of Dower House Pond Branch
Dower House Pond Branch	1.2/Dower House Pond
Dower House Pond Branch	1.1/Bridge, Rosaryville Road
Dower House Pond Branch	0.6/Bridge, Frank Trippett Road
Dower House Pond Branch	0.0/Mouth of Dower House Pond Branch
Piscataway Creek	14.4/Mouth of Dower House Pond Branch
Piscataway Creek	13.5/Bridge, at U.S. Naval Reservation
Piscataway Creek	12.4/Bridge, Surratts Road
Piscataway Creek	11.9/Mouth of Unnamed Tributary
Unnamed Tributary	___/Head of Unnamed Tributary
Unnamed Tributary	1.9/Outfall, Boys Village of Maryland
Unnamed Tributary	0.0/Mouth of Unnamed Tributary
Piscataway Creek	11.9/Mouth of Unnamed Tributary
Piscataway Creek	11.0/Bridge, Md. Highway #5
Piscataway Creek	10.0/Bridge, Md. Highway #381
Piscataway Creek	8.8/Mouth of Butler Branch
Butler Branch	___/Head of Butler Branch
Butler Branch	1.1/Bridge, Thrift Road
Butler Branch	0.0/Mouth of Butler Branch
Piscataway Creek	8.8/Mouth of Butler Branch
Piscataway Creek	6.8/Mouth of Burch Branch
Burch Branch	___/Head of Burch Branch
Burch Branch	3.0/Lake Ruth
Burch Branch	2.9/Bridge, T.B.-Accokeek Road
Burch Branch	0.9/Bridge, Burroughs Road
Burch Branch	0.3/Bridge, Floral Park Road
Burch Branch	0.0/Mouth of Burch Branch
Piscataway Creek	6.8/Mouth of Burch Branch
Piscataway Creek	4.8/Bridge, Piscataway Road
Piscataway Creek	4.4/Mouth of Tinkers Creek
Tinkers Creek	7.9/Head of Tinkers Creek
Tinkers Creek	7.9/Mouth of Meetinghouse Branch
Meetinghouse Branch	___/Head of Meetinghouse Branch
Meetinghouse Branch	0.7/Bridge, Md. Highways #5 & #381
Meetinghouse Branch	0.0/Mouth of Meetinghouse Branch
Tinkers Creek	7.9/Mouth of Meetinghouse Branch

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Tinkers Creek	7.9/Mouth of Paynes Branch
Paynes Branch	___/Head of Paynes Branch
Paynes Branch	0.4/Bridge, Md. Highways #381 & #5
Paynes Branch	0.0/Mouth of Paynes Branch
Tinkers Creek	7.9/Mouth of Paynes Branch
Tinkers Creek	6.5/Bridge, Possum Pike
Tinkers Creek	4.5/Mouth of Pea Hill Branch
Pea Hill Branch	___/Head of Pea Hill Branch
Pea Hill Branch	2.7/Bridge, Md. Highway #381
Pea Hill Branch	1.0/Bridge, Possum Pike
Pea Hill Branch	0.0/Mouth of Pea Hill Branch
Tinkers Creek	4.5/Mouth of Pea Hill Branch
Tinkers Creek	0.6/Bridge, Gallahan Road
Tinkers Creek	0.0/Mouth of Tinkers Creek (D.A. 16.2)
Piscataway Creek	4.4/Mouth of Tinkers Creek
Piscataway Creek	4.2/Bridge, Livingston Road
Piscataway Creek	3.7/Outfall, Fort Washington Forest
Piscataway Creek	3.3/Bridge, Indian Head Hwy (#210)
Piscataway Creek	___/Mouth of Waterloo Run
Waterloo Run	___/Head of Waterloo Run
Waterloo Run	___/Outfall, Davis Sand & Gravel Co.
Waterloo Run	0.0/Mouth of Waterloo Run
Piscataway Creek	___/Mouth of Waterloo Run
Piscataway Creek	___/Outfall, A. H. Smith & Co.
Piscataway Creek	___/Outfall, Davis Sand & Gravel Co.
Piscataway Creek	___/Outfall, Fort Washington Estates
Piscataway Creek	0.0/Mouth of Piscataway Creek (D.A. 70.4)
POTOMAC RIVER	97.2/Mouth of Piscataway Creek, Md.
POTOMAC RIVER	95.8/Mouth of Little Hunting Creek, Va.
Little Hunting Creek	___/Head of Little Hunting Creek
Little Hunting Creek	2.5/Bridge, U.S. Highway #1
Little Hunting Creek	1.7/Mouth of North Branch
North Branch	___/Head of North Branch
North Branch	0.0/Mouth of North Branch
Little Hunting Creek	1.7/Mouth of North Branch
Little Hunting Creek	1.2/Outfall, Sewage Disposal near Wellington
Little Hunting Creek	0.2/Bridge, Mt. Vernon Memorial Hwy.
Little Hunting Creek	0.0/Mouth of Little Hunting Creek
POTOMAC RIVER	95.8/Mouth of Little Hunting Creek, Va.
POTOMAC RIVER	95.2/County Line, Upstream - Prince George's, Md. Downstream - Charles Co., Md.
POTOMAC RIVER	95.2/Sampling Station, D.C. Dept. Sanitary Engineering, Mount Vernon
POTOMAC RIVER	93.8/Sampling Station, D.C. Dept. Sanitary Engineering, Marshall Hall
POTOMAC RIVER	93.5/Mouth of Dogue Creek, Va.
Dogue Creek	___/Head of Dogue Creek
Dogue Creek	7.1/Bridge, Kings Hwy.

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Dogue Creek	5.6/Mouth of Barnyard Run
Barnyard Run	___/Head of Barnyard Run
Barnyard Run	0.0/Mouth of Barnyard Run
Dogue Creek	5.6/Mouth of Barnyard Run
Dogue Creek	4.6/Mouth of Piney Run
Piney Run	___/Head of Piney Run
Piney Run	0.0/Mouth of Piney Run
Dogue Creek	4.6/Mouth of Piney Run
Dogue Creek	2.7/Bridge, U. S. Highway #1
Dogue Creek	2.1/Bridge, Va. Highway #235
Dogue Creek	0.0/Mouth of Dogue Creek
POTOMAC RIVER	93.5/Mouth of Dogue Creek, Va.
POTOMAC RIVER	91.3/Mouth of Gunston Cove, Va.
Gunston Cove	2.1/Head of Gunston Cove
Gunston Cove	2.0/Mouth of Accotink Creek
Accotink Creek	___/Head of Accotink Creek
Accotink Creek	5.6/Bridge, Va. Highway #350
Accotink Creek	5.4/Bridge, Richmond, Fredericksburg & Potomac R.R.
Accotink Creek	4.6/Bridge, Telegraph Road
Accotink Creek	4.1/Mouth of Long Branch
Long Branch	___/Head of Long Branch
Long Branch	0.0/Mouth of Long Branch
Accotink Creek	4.1/Mouth of Long Branch
Accotink Creek	2.3/Bridge, U. S. Highway #1
Accotink Creek	0.0/Mouth of Accotink Creek
Gunston Cove	2.0/Mouth of Accotink Creek
Gunston Cove	2.0/Mouth of Pohick Bay
Pohick Bay	1.6/Head of Pohick Bay
Pohick Bay	1.5/Mouth of Pohick Creek
Pohick Creek	___/Head of Pohick Creek
Pohick Creek	7.6/Mouth of Middle Run
Middle Run	___/Head of Middle Run
Middle Run	0.0/Mouth of Middle Run
Pohick Creek	7.6/Mouth of Middle Run
Pohick Creek	5.0/Mouth of Rocky Branch
Rocky Branch	___/Head of Rocky Branch
Rocky Branch	0.0/Mouth of Rocky Branch
Pohick Creek	5.0/Mouth of Rocky Branch
Pohick Creek	4.8/Bridge, Va. Highway #350
Pohick Creek	4.7/Bridge, Richmond, Fredericksburg & Potomac R.R.
Pohick Creek	3.7/Bridge, Telegraph Road
Pohick Creek	3.3/Bridge, U. S. Highway #1
Pohick Creek	0.0/Mouth of Pohick Creek
Pohick Bay	1.5/Mouth of Pohick Creek
Pohick Bay	0.0/Mouth of Pohick Bay

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Gunston Cove	2.0/Mouth of Pohick Bay
Gunston Cove	0.0/Mouth of Gunston Cove
POTOMAC RIVER	91.3/Mouth of Gunston Cove, Va.
POTOMAC RIVER	89.5/Sampling Station, D.C. Dept. Sanitary Engineering, Hallowing Point
POTOMAC RIVER	89.0/Mouth of Pomonkey Creek, Md.
Pomonkey Creek	2.0/Head of Pomonkey Creek
Pomonkey Creek	___/Mouth of Mill Swamp
Mill Swamp	___/Head of Mill Swamp
Mill Swamp	1.0/Bridge, Md. Highway #227
Mill Swamp	0.0/Mouth of Mill Swamp
Pomonkey Creek	___/Mouth of Mill Swamp
Pomonkey Creek	___/Outfall, Indian Head Estates
Pomonkey Creek	0.0/Mouth of Pomonkey Creek
POTOMAC RIVER	89.0/Mouth of Pomonkey Creek
POTOMAC RIVER	83.3/Mouth of Occoquan Bay, Va.
Occoquan Bay	4.0/Head of Occoquan Bay
Occoquan Bay	4.0/Mouth of Occoquan Creek
Occoquan Creek	___/Head of Occoquan Creek
Occoquan Creek	___/Gaging Station near Occoquan, Va. (D. A. 546)
Occoquan Creek	___/Intake, Alexandria
Occoquan Creek	0.6/Bridge, U. S. Highway #1
Occoquan Creek	0.5/Bridge, Richmond, Fredericksburg & Potomac R.R.
Occoquan Creek	0.0/Mouth of Occoquan Creek
Occoquan Bay	4.0/Mouth of Occoquan Creek
Occoquan Bay	3.6/Mouth of Massey Creek
Massey Creek	0.8/Head of Massey Creek
Massey Creek	0.8/Mouth of South Branch
South Branch	___/Head of South Branch
South Branch	0.0/Mouth of South Branch
Massey Creek	0.8/Mouth of South Branch
Massey Creek	0.7/Mouth of Giles Run
Giles Run	___/Head of Giles Run
Giles Run	0.0/Mouth of Giles Run
Massey Creek	0.7/Mouth of Giles Run
Massey Creek	0.0/Mouth of Massey Creek
Occoquan Bay	3.6/Mouth of Massey Creek
Occoquan Bay	2.6/Mouth of Belmont Bay
Belmont Bay	1.3/Head of Belmont Bay
Belmont Bay	1.3/Mouth of Kanes Creek
Kanes Creek	___/Head of Kanes Creek
Kanes Creek	0.0/Mouth of Kanes Creek
Belmont Bay	1.3/Mouth of Kanes Creek
Belmont Bay	0.0/Mouth of Belmont Bay
Occoquan Bay	2.6/Mouth of Belmont Bay

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Occoquan Bay	1.4/Mouth of Marumsco Creek
Marumsco Creek	___/Head of Marumsco Creek
Marumsco Creek	0.0/Mouth of Marumsco Creek
Occoquan Bay	1.4/Mouth of Marumsco Creek
Occoquan Bay	0.2/Mouth of Farm Creek
Farm Creek	___/Head of Farm Creek
Farm Creek	0.0/Mouth of Farm Creek
Occoquan Bay	0.2/Mouth of Farm Creek
Occoquan Bay	0.0/Mouth of Occoquan Bay
POTOMAC RIVER	83.3/Mouth of Occoquan Bay
POTOMAC RIVER	82.4/Mouth of Neabsco Creek, Va.
Neabsco Creek	___/Head of Neabsco Creek
Neabsco Creek	2.9/Outfall, Garfield, Va.
Neabsco Creek	2.8/Bridge, U. S. Highway #1
Neabsco Creek	0.5/Bridge, Richmond, Fredericksburg & Potomac R.R.
Neabsco Creek	0.0/Mouth of Neabsco Creek
POTOMAC RIVER	82.4/Mouth of Neabsco Creek, Va.
POTOMAC RIVER	___/Outfall, Potomac Heights

D. A. Drainage Area, square feet

January, 1965

POTOMAC RIVER — DRAINAGE BASIN

Mattawoman Creek to Mouth — SUB-BASIN

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
POTOMAC RIVER	81.6/Mouth of Mattawoman Creek, Md.
Mattawoman Creek	____/Head of Mattawoman Creek
Mattawoman Creek	26.5/Bridge, Pa. R.R.
Mattawoman Creek	26.3/Bridge, U. S. Highway #301 (Md. #5)
Mattawoman Creek	25.6/Mouth of Timothy Branch
Timothy Branch	4.5/Head of Timothy Branch
Timothy Branch	3.5/Bridge, Md. Highway #381
Timothy Branch	0.9/Bridge, U. S. Highway #301 (Md. #5)
Timothy Branch	0.6/Bridge, McKendree Road
Timothy Branch	0.0/Mouth of Timothy Branch
Mattawoman Creek	25.6/Mouth of Timothy Branch
Mattawoman Creek	23.8/Bridge, Gardner Road
Mattawoman Creek	19.7/Mouth of Piney Branch
Piney Branch	____/Head of Piney Branch
Piney Branch	5.0/Bridge, U. S. Highway #301
Piney Branch	2.0/Bridge, Cat Pond Road
Piney Branch	0.5/Bridge, Berry Road
Piney Branch	0.0/Mouth of Piney Branch
Mattawoman Creek	19.7/Mouth of Piney Branch
Mattawoman Creek	18.8/Bridge, Bealle Hill Road
Mattawoman Creek	14.2/Bridge
Mattawoman Creek	12.6/Bridge, Md. Highway #227
Mattawoman Creek	12.6/Gaging Station near Pomonkey, Md. (D. A. 57.7)
Mattawoman Creek	11.5/Bridge, U.S. Government R.R.
Mattawoman Creek	7.7/Bridge, Md. Highway #225
Mattawoman Creek	6.5/Outfall, Indian Head U.S.N. Powder Fac.
Mattawoman Creek	6.5/Outfall, Indian Head, Md.
Mattawoman Creek	0.0/Mouth of Mattawoman Creek (D.A. 98.1)
POTOMAC RIVER	81.6/Mouth of Mattawoman Creek
POTOMAC RIVER	81.2/Mouth of Powells Creek, Va.
Powells Creek	____/Head of Powells Creek
Powells Creek	2.3/Bridge, U.S. Highway #1
Powells Creek	0.3/Bridge, Richmond, Frederick & Potomac R.R.
Powells Creek	0.0/Mouth of Powells Creek
POTOMAC RIVER	81.2/Mouth of Powells Creek, Va.
POTOMAC RIVER	79.1/Mouth of Chicamuxen Creek, Md.
Chicamuxen Creek	____/Head of Chicamuxen Creek
Chicamuxen Creek	0.0/Mouth of Chicamuxen Creek
POTOMAC RIVER	79.1/Mouth of Chicamuxen Creek, Md.
POTOMAC RIVER	78.7/Possum Point Power Station, Va.
POTOMAC RIVER	____/Intake & Outfall, Indian Head Power Plant
POTOMAC RIVER	78.2/Mouth of Quantico Creek, Va.
Quantico Creek	____/Head of Quantico Creek
Quantico Creek	5.8/Mouth of Mary Bird Branch
Mary Bird Branch	____/Head of Mary Bird Branch
Mary Bird Branch	0.0/Mouth of Mary Bird Branch
Quantico Creek	5.8/Mouth of Mary Bird Branch

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Quantico Creek	3.0/Outfall, near Dumfries, Va.
Quantico Creek	2.6/Outfall, at Melrose Gardens, Va.
Quantico Creek	0.3/Mouth of Little Creek
Little Creek	___/Head of Little Creek
Little Creek	0.0/Mouth of Little Creek
Quantico Creek	0.3/Mouth of Little Creek
Quantico Creek	0.3/Bridge, Richmond, Frederick & Potomac R.R.
Quantico Creek	0.0/Mouth of Quantico Creek
POTOMAC RIVER	78.2/Mouth of Quantico Creek
POTOMAC RIVER	77.8/Mouth of Goose Bay, Md.
Goose Bay	___/Head of Goose Bay
Goose Bay	0.0/Mouth of Goose Bay
POTOMAC RIVER	77.8/Mouth of Goose Bay, Md.
POTOMAC RIVER	76.1/Mouth of Chopawamsie Creek, Va.
Chopawamsie Creek	___/Head of Chopawamsie Creek
Chopawamsie Creek	3.7/Bridge, U. S. Highway #1
Chopawamsie Creek	0.3/Bridge, Richmond, Frederick & Potomac R.R.
Chopawamsie Creek	0.0/Mouth of Chopawamsie Creek
POTOMAC RIVER	76.1/Mouth of Chopawamsie Creek
POTOMAC RIVER	74.7/Mouth of Moth Tank Creek, Va.
Moth Tank Creek	___/Head of Moth Tank Creek
Moth Tank Creek	0.1/Bridge, Richmond, Frederick & Potomac R.R.
Moth Tank Creek	0.0/Mouth of Moth Tank Creek
POTOMAC RIVER	74.7/Mouth of Moth Tank Creek, Va.
POTOMAC RIVER	74.5/Mouth of Mallows Bay, Md.
Mallows Bay	___/Head of Mallows Bay
Mallows Bay	0.0/Mouth of Mallows Bay
POTOMAC RIVER	74.5/Mouth of Mallows Bay
POTOMAC RIVER	73.1/Mouth of Blue Bay
Blue Bay	___/Head of Blue Bay
Blue Bay	0.0/Mouth of Blue Bay
POTOMAC RIVER	73.1/Mouth of Blue Bay
POTOMAC RIVER	71.6/Wades Bay, Md.
POTOMAC RIVER	70.7/Clifton Beach, Md.
POTOMAC RIVER	69.3/Mouth of Aquia Creek, Va.
Aquia Creek	___/Head of Aquia Creek
Aquia Creek	3.3/Bridge, Richmond, Frederick & Potomac R.R.
Aquia Creek	2.8/Mouth of Boars Creek
Boars Creek	___/Head of Boars Creek, Va.
Boars Creek	0.8/Bridge, Richmond, Frederick & Potomac R.R.
Boars Creek	0.0/Mouth of Boars Creek
Aquia Creek	2.8/Mouth of Boars Creek
Aquia Creek	0.0/Mouth of Aquia Creek
POTOMAC RIVER	69.3/Mouth of Aquia Creek
POTOMAC RIVER	67.8/Mouth of Thorn Gut
Thorn Gut	___/Head of Thorn Gut
Thorn Gut	1.7/Bridge, Md. Highway #563

DISTANCES FROM MOUTH WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Thorn Gut	0.0/Mouth of Thorn Gut
POTOMAC RIVER	67.8/Mouth of Thorn Gut
POTOMAC RIVER	66.9/Mouth of Potomac Creek, Va.
Potomac Creek	4.6/Head of Potomac Creek
Potomac Creek	4.6/Mouth of Potomac Run
Potomac Run	___/Head of Potomac Run
Potomac Run	0.0/Mouth of Potomac Run
Potomac Creek	4.6/Mouth of Potomac Run
Potomac Creek	1.9/Mouth of Black Swamp Branch
Black Swamp Branch	___/Head of Black Swamp Branch
Black Swamp Branch	0.0/Mouth of Black Swamp Branch
Potomac Creek	1.9/Mouth of Black Swamp Branch
Potomac Creek	1.0/Mouth of Accakeek Creek
Accakeek Creek	___/Head of Accakeek Creek
Accakeek Creek	0.0/Mouth of Accakeek Creek
Potomac Creek	1.0/Mouth of Accakeek Creek
Potomac Creek	0.0/Mouth of Potomac Creek
POTOMAC RIVER	66.9/Mouth of Potomac Creek
POTOMAC RIVER	66.6/Mouth of Passapatanzy Creek
Passapatanzy Creek	___/Head of Passapatanzy Creek
Passapatanzy Creek	1.9/Bridge, Va. Highway #218
Passapatanzy Creek	0.0/Mouth of Passapatanzy Creek
POTOMAC RIVER	66.6/Mouth of Passapatanzy Creek
POTOMAC RIVER	58.0/Mouth of Nanjemoy Creek, Md.
Nanjemoy Creek	11.4/Head of Nanjemoy Creek
Nanjemoy Creek	11.4/Mouth of Beaverdam Creek
Beaverdam Creek	___/Head of Beaverdam Creek
Beaverdam Creek	4.8/Bridge, Md. Highway #6
Beaverdam Creek	2.2/Bridge, Md. Highway #426
Beaverdam Creek	0.0/Mouth of Beaverdam Creek
Nanjemoy Creek	11.4/Mouth of Beaverdam Creek
Nanjemoy Creek	11.4/Mouth of Hancock Run
Hancock Run	___/Head of Hancock Run
Hancock Run	2.8/Bridge, Md. Highway #426
Hancock Run	1.4/Bridge, Md. Highway #6
Hancock Run	0.0/Mouth of Hancock Run
Nanjemoy Creek	11.4/Mouth of Hancock Run
Nanjemoy Creek	11.0/Bridge, Secondary Road
Nanjemoy Creek	9.3/Bridge, Md. Highway #6
Nanjemoy Creek	3.5/Mouth of Hilltop Fork
Hilltop Fork	1.0/Head of Hilltop Fork
Hilltop Fork	0.6/Mouth of Wards Run
Wards Run	___/Head of Wards Run
Wards Run	2.1/Bridge, Md. Highway #6
Wards Run	0.0/Mouth of Wards Run
Hilltop Fork	0.6/Mouth of Wards Run
Hilltop Fork	0.0/Mouth of Hilltop Fork
Nanjemoy Creek	3.5/Mouth of Hilltop Fork

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Nanjemoy Creek	2.7/Barn Cove
Nanjemoy Creek	2.5/Mouth of Burgess Creek
Burgess Creek	3.0/Head of Burgess Creek
Burgess Creek	3.0/Mouth of Mill Run
Mill Run	___/Head of Mill Run
Mill Run	4.0/Bridge, Md. Highway #484
Mill Run	1.9/Bridge, Md. Highway #6
Mill Run	0.0/Mouth of Mill Run
Burgess Creek	3.0/Mouth of Mill Run
Burgess Creek	0.0/Mouth of Burgess Creek
Nanjemoy Creek	2.5/Mouth of Burgess Creek
Nanjemoy Creek	1.5/Mouth of Kings Creek
Kings Creek	___/Head of Kings Creek
Kings Creek	0.0/Mouth of Kings Creek
Nanjemoy Creek	1.5/Mouth of Kings Creek
Nanjemoy Creek	0.4/Mouth of Little Creek
Little Creek	___/Head of Little Creek
Little Creek	2.1/Bridge, Md. Highway #6
Little Creek	0.0/Mouth of Little Creek
Nanjemoy Creek	0.4/Mouth of Little Creek
Nanjemoy Creek	0.0/Mouth of Nanjemoy Creek (D.A. 78.0)
POTOMAC RIVER	58.0/Mouth of Nanjemoy Creek
POTOMAC RIVER	57.5/Mouth of Chotank Creek, Va.
Chotank Creek	___/Head of Chotank Creek
Chotank Creek	0.0/Mouth of Chotank Creek
POTOMAC RIVER	57.5/Mouth of Chotank Creek
POTOMAC RIVER	53.5/Mouth of Port Tobacco River, Md.
Port Tobacco River	3.9/Head of Port Tobacco River
Port Tobacco River	3.9/Mouth of Port Tobacco Creek
Port Tobacco Creek	___/Head of Port Tobacco Creek
Port Tobacco Creek	9.2/Bridge, Md. Highway #227
Port Tobacco Creek	8.0/Bridge, Turkey Hill Road
Port Tobacco Creek	4.1/Mouth of Jennie Run
Jennie Run	___/Head of Jennie Run
Jennie Run	2.5/Bridge, Mitchell Road
Jennie Run	0.2/Bridge, Md. Highway #469
Jennie Run	0.0/Mouth of Jennie Run
Port Tobacco Creek	4.1/Mouth of Jennie Run
Port Tobacco Creek	3.8/Bridge, Md. Highway #225
Port Tobacco Creek	1.5/Bridge, Md. Highway #6
Port Tobacco Creek	1.0/Mouth of Hoghole Run
Hoghole Run	___/Head of Hoghole Run
Hoghole Run	0.4/Bridge, Md. Highway #6
Hoghole Run	0.0/Mouth of Hoghole Run
Port Tobacco Creek	1.0/Mouth of Hoghole Run
Port Tobacco Creek	0.0/Mouth of Port Tobacco Creek
Port Tobacco River	3.9/Mouth of Port Tobacco Creek
Port Tobacco River	2.9/Mouth of Wills Branch

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Wills Branch	___/Head of Wills Branch
Wills Branch	0.6/Bridge, Md. Highway #469
Wills Branch	0.0/Mouth of Wills Branch
Port Tobacco River	2.9/Mouth of Wills Branch
Port Tobacco River	0.6/Mouth of Goose Creek
Goose Creek	___/Head of Goose Creek
Goose Creek	0.0/Mouth of Goose Creek
Port Tobacco River	0.6/Mouth of Goose Creek
Port Tobacco River	___/Outfall, La Plata, Md.
Port Tobacco River	___/Outfall, A. D. Gamble & Son, La Plata, Md.
Port Tobacco River	0.0/Mouth of Port Tobacco River (D.A. 47.4)
POTOMAC RIVER	53.5/Mouth of Port Tobacco River, Md.
POTOMAC RIVER	50.9/Mouth of Popes Creek, Md.
Popes Creek	___/Head of Popes Creek
Popes Creek	2.2/Mouth of Huckleberry Branch
Huckleberry Branch	___/Head of Huckleberry Branch
Huckleberry Branch	0.0/Mouth of Huckleberry Branch
Popes Creek	2.2/Mouth of Huckleberry Branch
Popes Creek	2.0/Bridge, Pa. R.R.
Popes Creek	1.6/Mouth of Ellenboro Hill Run
Ellenboro Hill Run	___/Head of Ellenboro Hill Run
Ellenboro Hill Run	0.0/Mouth of Ellenboro Hill Run
Popes Creek	1.6/Mouth of Ellenboro Hill Run
Popes Creek	1.4/Mouth of Glasva Branch
Glasva Branch	___/Head of Glasva Branch
Glasva Branch	0.0/Mouth of Glasva Branch
Popes Creek	1.4/Mouth of Glasva Branch
Popes Creek	1.0/Mouth of Drinks Run
Drinks Run	___/Head of Drinks Run
Drinks Run	0.1/Bridge, Pa. R.R.
Drinks Run	0.0/Mouth of Drinks Run
Popes Creek	1.0/Mouth of Drinks Run
Popes Creek	0.1/Bridge, Popes Creek Bridge
Popes Creek	0.0/Mouth of Popes Creek
POTOMAC RIVER	50.9/Mouth of Popes Creek
POTOMAC RIVER	48.9/Mouth of Clifton Creek
Clifton Creek	___/Head of Clifton Creek
Clifton Creek	0.8/Mouth of Ravens Crest Creek
Ravens Crest Creek	___/Head of Ravens Crest Creek
Ravens Crest Creek	0.0/Mouth of Ravens Crest Creek
Clifton Creek	0.8/Mouth of Ravens Crest Creek
Clifton Creek	0.4/Mouth of Trunk Gut
Trunk Gut	___/Head of Trunk Gut
Trunk Gut	0.0/Mouth of Trunk Gut
Clifton Creek	0.4/Mouth of Trunk Gut
Clifton Creek	0.0/Mouth of Clifton Creek
POTOMAC RIVER	48.9/Mouth of Clifton Creek
POTOMAC RIVER	48.8/Bridge, U.S. Highway #301

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
POTOMAC RIVER	48.1/Mouth of Pasquahanza Pond, Md.
Pasquahanza Pond	0.3/Head of Pasquahanza Pond
Pasquahanza Pond	0.3/Mouth of Pasquahanza Creek
Pasquahanza Creek	___/Head of Pasquahanza Creek
Pasquahanza Creek	0.6/Mouth of Wayside Creek
Wayside Creek	___/Head of Wayside Creek
Wayside Creek	0.0/Mouth of Wayside Creek
Pasquahanza Creek	0.6/Mouth of Wayside Creek
Pasquahanza Creek	0.0/Mouth of Pasquahanza Creek
Pasquahanza Pond	0.3/Mouth of Pasquahanza Creek
Pasquahanza Pond	0.0/Mouth of Pasquahanza Pond
POTOMAC RIVER	48.1/Mouth of Pasquahanza Pond
POTOMAC RIVER	46.6/Mouth of Gambo Creek, Va.
Gambo Creek	___/Head of Gambo Creek
Gambo Creek	3.7/Bridge, U.S. Highway #301
Gambo Creek	0.4/Bridge, Va. Highway #206
Gambo Creek	0.0/Mouth of Gambo Creek
POTOMAC RIVER	46.6/Mouth of Gambo Creek
POTOMAC RIVER	45.0/Mouth of Upper Machodoc Creek
Upper Machodoc Creek	18.0/Head of Upper Machodoc Creek
Upper Machodoc Creek	16.6/Bridge
Upper Machodoc Creek	14.8/Mason Mill Pond
Upper Machodoc Creek	10.9/Mouth of Pepper Mill Creek
Pepper Mill Creek	___/Head of Pepper Mill Creek
Pepper Mill Creek	6.4/Bridge, U.S. Government R.R.
Pepper Mill Creek	1.4/Bridge, Va. Highway #206
Pepper Mill Creek	0.0/Mouth of Pepper Mill Creek
Upper Machodoc Creek	10.9/Mouth of Pepper Mill Creek
Upper Machodoc Creek	10.0/Bridge, U.S. Highway #301
Upper Machodoc Creek	6.5/Mouth of Poplar Neck Creek
Poplar Neck Creek	___/Head of Poplar Neck Creek
Poplar Neck Creek	0.0/Mouth of Poplar Neck Creek
Upper Machodoc Creek	6.5/Mouth of Poplar Neck Creek
Upper Machodoc Creek	1.8/Mouth of Deep Creek
Deep Creek	___/Head of Deep Creek
Deep Creek	0.0/Mouth of Deep Creek
Upper Machodoc Creek	1.8/Mouth of Deep Creek
Upper Machodoc Creek	1.4/Mouth of Williams Creek
Williams Creek	___/Head of Williams Creek
Williams Creek	2.1/Bridge, U.S. Highway #301
Williams Creek	1.3/Bridge, Va. Highway #206
Williams Creek	0.0/Mouth of Williams Creek
Upper Machodoc Creek	1.4/Mouth of Williams Creek
Upper Machodoc Creek	0.1/County Line, Upstream - King George's Downstream - Charles Counties, Va.
Upper Machodoc Creek	0.0/Mouth of Upper Machodoc Creek, Va.
POTOMAC RIVER	45.0/Mouth of Upper Machodoc Creek, Va.

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
POTOMAC RIVER	44.6/Mouth of Piccowaxen Creek, Md.
Piccowaxen Creek	___/Head of Piccowaxen Creek
Piccowaxen Creek	1.6/Bridge, Md. Highway #3
Piccowaxen Creek	1.0/Mouth of Ditchley Prong
Ditchley Prong	___/Head of Ditchley Prong
Ditchley Prong	1.2/Bridge, Md. Highway #3
Ditchley Prong	0.0/Mouth of Ditchley Prong
Piccowaxen Creek	1.0/Mouth of Ditchley Prong
Piccowaxen Creek	0.0/Mouth of Piccowaxen Creek
POTOMAC RIVER	44.6/Mouth of Piccowaxen Creek
POTOMAC RIVER	43.7/Mouth of Rosier Creek, Va.
Rosier Creek	3.6/Head of Rosier Creek
Rosier Creek	3.6/Mouth of Pine Hill Creek
Pine Hill Creek	___/Head of Pine Hill Creek
Pine Hill Creek	0.0/Mouth of Pine Hill Creek
Rosier Creek	3.6/Mouth of Pine Hill Creek
Rosier Creek	3.5/Bridge, Va. Highway #205
Rosier Creek	0.0/Mouth of Rosier Creek
POTOMAC RIVER	43.7/Mouth of Rosier Creek
POTOMAC RIVER	43.3/Mouth of Wilkerson Creek
Wilkerson Creek	0.6/Head of Wilkerson Creek
Wilkerson Creek	0.1/Bridge, Va. Highway #205
Wilkerson Creek	0.0/Mouth of Wilkerson Creek
POTOMAC RIVER	43.3/Mouth of Wilkerson Creek
POTOMAC RIVER	42.4/Mouth of Cuckold Creek, Md.
Cuckold Creek	1.9/Head of Cuckold Creek
Cuckold Creek	1.9/Mouth of Wise Marsh
Wise Marsh	0.7/Head of Wise Marsh
Wise Marsh	0.0/Mouth of Wise Marsh
Cuckold Creek	1.9/Mouth of Wise Marsh
Cuckold Creek	1.0/Mouth of Middletown Branch
Middletown Branch	___/Head of Middletown Branch
Middletown Branch	0.0/Mouth of Middletown Branch
Cuckold Creek	1.0/Mouth of Middletown Branch
Cuckold Creek	0.6/Mouth of Perry Branch
Perry Branch	___/Head of Perry Branch
Perry Branch	0.0/Mouth of Perry Branch
Cuckold Creek	0.6/Mouth of Perry Branch
Cuckold Creek	0.0/Mouth of Cuckold Creek
POTOMAC RIVER	42.4/Mouth of Cuckold Creek
POTOMAC RIVER	40.9/Mouth of Weir Creek, Md.
Weir Creek	0.4/Head of Weir Creek
Weir Creek	0.0/Mouth of Weir Creek
POTOMAC RIVER	40.9/Mouth of Weir Creek
POTOMAC RIVER	39.8/Mouth of Monroe Bay, Va.
Monroe Bay	0.4/Head of Monroe Bay
Monroe Bay	0.3/Mouth of Mattox Creek

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Mattox Creek	___/Head of Mattox Creek
Mattox Creek	1.5/Burnt House Cove
Mattox Creek	1.1/Columbia Cove
Mattox Creek	0.0/Mouth of Mattox Creek
Monroe Bay	0.3/Mouth of Mattox Creek
Monroe Bay	0.2/Mouth of Monroe Creek
Monroe Creek	___/Head of Monroe Creek
Monroe Creek	0.0/Mouth of Monroe Creek
Monroe Bay	0.2/Mouth of Monroe Creek
Monroe Bay	0.0/Mouth of Monroe Bay
POTOMAC RIVER	39.8/Mouth of Monroe Bay
POTOMAC RIVER	38.2/Mouth of Bridges Creek
Bridges Creek	___/Head of Bridges Creek
Bridges Creek	0.0/Mouth of Bridges Creek
POTOMAC RIVER	38.2/Mouth of Bridges Creek
POTOMAC RIVER	38.1/Mouth of Neale Sound, Md.
Neale Sound	___/Head of Neale Sound
Neale Sound	0.0/Mouth of Neale Sound
POTOMAC RIVER	38.1/Mouth of Neale Sound
POTOMAC RIVER	36.6/Mouth of Popes Creek, Va.
Popes Creek	1.5/Head of Popes Creek
Popes Creek	1.5/Mouth of Popes Creek Swamp
Popes Creek Swamp	___/Head of Popes Creek Swamp
Popes Creek Swamp	0.0/Mouth of Popes Creek Swamp
Popes Creek	1.5/Mouth of Popes Creek Swamp
Popes Creek	0.0/Mouth of Popes Creek
POTOMAC RIVER	36.6/Mouth of Popes Creek
POTOMAC RIVER	35.1/County Line, Upstream - Charles, Downstream - St. Mary's Counties, Md.
POTOMAC RIVER	35.1/Mouth of Wicomico River, Md.
Wicomico River	12.7/Head of Wicomico River, Charles Co.
Wicomico River	12.7/Mouth of Allens Fresh Run
Allens Fresh Run	2.5/Head of Allens Fresh Run
Allens Fresh Run	2.5/Mouth of Zekiah Swamp Run
Zekiah Swamp Run	21.0/Head of Zekiah Swamp Run
Zekiah Swamp Run	19.0/Bridge, Cedar Point R.R.
Zekiah Swamp Run	18.3/County Line, Upstream - Pr. Georges, Downstream - Charles
Zekiah Swamp Run	16.8/Mouth of Wolf Den Branch
Wolf Den Branch	___/Head of Wolf Den Branch
Wolf Den Branch	3.5/Bridge, Cedar Point R.R.
Wolf Den Branch	3.2/Bridge, Cedarville Road
Wolf Den Branch	1.5/County Line, Upstream - Pr. Georges, Downstream - Charles
Wolf Den Branch	0.0/Mouth of Wolf Den Branch
Zekiah Swamp Run	16.8/Mouth of Wolf Den Branch
Zekiah Swamp Run	15.8/Bridge, Md. Highway #382

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Zekiah Swamp Run	14.0/Mouth of Jordan Swamp
Jordan Swamp	____/Head of Jordan Swamp
Jordan Swamp	0.0/Mouth of Jordan Swamp
Zekiah Swamp Run	14.0/Mouth of Jordan Swamp
Zekiah Swamp Run	11.7/Bridge, Md. Highway #5
Zekiah Swamp Run	10.4/Mouth of Piney Branch
Piney Branch	____/Head of Piney Branch
Piney Branch	0.7/Bridge, Md. Highway #488
Piney Branch	0.0/Mouth of Piney Branch
Zekiah Swamp Run	10.4/Mouth of Piney Branch
Zekiah Swamp Run	7.8/Mouth of Kerrick Swamp
Kerrick Swamp	____/Head of Kerrick Swamp
Kerrick Swamp	2.6/Bridge, Md. Highway #488
Kerrick Swamp	0.0/Mouth of Kerrick Swamp
Zekiah Swamp Run	7.8/Mouth of Kerrick Swamp
Zekiah Swamp Run	6.7/Mouth of Stoner Creek
Stoner Creek	____/Head of Stoner Creek
Stoner Creek	0.0/Mouth of Stoner Creek
Zekiah Swamp Run	6.7/Mouth of Stoner Creek
Zekiah Swamp Run	6.1/Bridge, Md. Highway #6
Zekiah Swamp Run	5.7/Mouth of James Run
James Run	____/Head of James Run
James Run	0.1/Mouth of Cooksey Run
Cooksey Run	____/Head of Cooksey Run
Cooksey Run	0.0/Mouth of Cooksey Run
James Run	0.1/Mouth of Cooksey Run
James Run	0.0/Mouth of James Run
Zekiah Swamp Run	5.7/Mouth of James Run
Zekiah Swamp Run	5.65/Mouth of Rogers Mill Branch
Rogers Mill Branch	____/Head of Rogers Mill Branch
Rogers Mill Branch	0.0/Mouth of Rogers Mill Branch
Zekiah Swamp Run	5.65/Mouth of Rogers Mill Branch
Zekiah Swamp Run	2.9/Mouth of Clark Run
Clark Run	____/Head of Clark Run
Clark Run	6.5/Bridge, Md. Highway #6
Clark Run	3.0/Mouth of Spring Hill Branch
Spring Hill Branch	____/Head of Spring Hill Br.
Spring Hill Branch	0.0/Mouth of Spring Hill Br.
Clark Run	3.0/Mouth of Spring Hill Branch
Clark Run	2.1/Mouth of Maddox Branch
Maddox Branch	____/Head of Maddox Branch
Maddox Branch	0.0/Mouth of Maddox Branch
Clark Run	2.1/Mouth of Maddox Branch
Clark Run	1.9/Bridge, Md. Highway #558
Clark Run	0.5/Mouth of Ross Branch
Ross Branch	____/Head of Ross Branch
Ross Branch	0.0/Mouth of Ross Branch
Clark Run	0.5/Mouth of Ross Branch
Clark Run	0.0/Mouth of Clark Run

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Zekiah Swamp Run	2.9/Mouth of Clark Run
Zekiah Swamp Run	2.4/Mouth of Scar Branch
Scar Branch	___/Head of Scar Branch
Scar Branch	0.0/Mouth of Scar Branch
Zekiah Swamp Run	2.4/Mouth of Scar Branch
Zekiah Swamp Run	1.8/Mouth of Herbert Run
Herbert Run	___/Head of Herbert Run
Herbert Run	0.0/Mouth of Herbert Run
Zekiah Swamp Run	1.8/Mouth of Herbert Run
Zekiah Swamp Run	1.1/Mouth of Bowling Creek
Bowling Creek	___/Head of Bowling Creek
Bowling Creek	0.0/Mouth of Bowling Creek
Zekiah Swamp Run	1.1/Mouth of Bowling Creek
Zekiah Swamp Run	0.6/Mouth of Old Mill Branch
Old Mill Branch	___/Head of Old Mill Branch
Old Mill Branch	1.1/Bridge, Md. Highway #428
Old Mill Branch	0.0/Mouth of Old Mill Branch
Zekiah Swamp Run	0.6/Mouth of Old Mill Branch
Zekiah Swamp Run	0.3/Mouth of Willmer Creek
Willmer Creek	___/Head of Willmer Creek
Willmer Creek	0.0/Mouth of Willmer Creek
Zekiah Swamp Run	0.3/Mouth of Willmer Creek
Zekiah Swamp Run	0.0/Mouth of Zekiah Swamp Run
Allens Fresh Run	2.5/Mouth of Zekiah Swamp Run
Allens Fresh Run	1.8/Cramer Gut
Allens Fresh Run	0.9/Mouth of Posey Creek
Posey Creek	1.2/Head of Posey Creek
Posey Creek	0.6/Tears Gut
Posey Creek	0.1/Mouth of Bunker Hill Branch
Bunker Hill Branch	___/Head of Bunker Hill Branch
Bunker Hill Branch	0.0/Mouth of Bunker Hill Branch
Posey Creek	0.1/Mouth of Bunker Hill Branch
Posey Creek	0.01/Steinhauser Gut
Posey Creek	0.0/Mouth of Posey Creek
Allens Fresh Run	0.9/Mouth of Posey Creek
Allens Fresh Run	0.3/Foggy Bottoms Gut
Allens Fresh Run	0.1/Colby Gut
Allens Fresh Run	0.0/Mouth of Allens Fresh Run
Wicomico River	12.7/Mouth of Allens Fresh Run
Wicomico River	12.5/Mouth of Newport Marsh Run
Newport Marsh Run	___/Head of Newport Marsh Run
Newport Marsh Run	0.0/Mouth of Newport Marsh Run
Wicomico River	12.5/Mouth of Newport Marsh Run
Wicomico River	12.0/Mouth of Newport Run
Newport Run	3.2/Head of Newport Run
Newport Run	3.2/Mouth of Newport Branch
Newport Branch	___/Head of Newport Branch
Newport Branch	0.0/Mouth of Newport Branch

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Newport Run	3.2/Mouth of Newport Branch
Newport Run	3.2/Mouth of Peach Run
Peach Run	___/Head of Peach Run
Peach Run	0.0/Mouth of Peach Run
Newport Run	3.2/Mouth of Peach Run
Newport Run	2.7/Mouth of Murphy Run
Murphy Run	___/Head of Murphy Run
Murphy Run	0.0/Mouth of Murphy Run
Newport Run	2.7/Mouth of Murphy Run
Newport Run	2.6/Bridge, Md. Highway #234
Newport Run	2.3/Mouth of Gilbert Creek
Gilbert Creek	___/Head of Gilbert Creek
Gilbert Creek	8.3/Mouth of Smoots Pond Run
Smoots Pond Run	___/Head of Smoots Pond Run
Smoots Pond Run	0.0/Mouth of Smoots Pond Run
Gilbert Creek	8.3/Mouth of Smoots Pond Run
Gilbert Creek	6.1/Bridge, Md. Highway #6
Gilbert Creek	5.3/Mouth of Wheatley Run
Wheatley Run	___/Head of Wheatley Run
Wheatley Run	0.5/Bridge, Md. Highway #6
Wheatley Run	0.0/Mouth of Wheatley Run
Gilbert Creek	5.3/Mouth of Wheatley Run
Gilbert Creek	3.8/Mouth of Trinity Church Run
Trinity Church Run	___/Head of Trinity Church Run
Trinity Church Run	3.5/County Line, Upstream - St. Marys, Downstream - Charles Counties, Maryland
Trinity Church Run	0.0/Mouth of Trunity Church Run
Gilbert Creek	3.8/Mouth of Trinity Church Run
Gilbert Creek	3.3/Bridge, Md. Highway #232
Gilbert Creek	2.9/Mouth of Hells Bottom Run
Hells Bottom Run	___/Head of Hells Bottom Run
Hells Bottom Run	2.2/Bridge, Md. Highway #6
Hells Bottom Run	0.5/Mouth of St. Stephen Run
St. Stephen Run	___/Head of St. Stephen Run
St. Stephen Run	0.0/Mouth of St. Stephen Run
Hells Bottom Run	0.5/Mouth of St. Stephen Run
Hells Bottom Run	0.0/Mouth of Hells Bottom Run
Gilbert Creek	2.9/Mouth of Hells Bottom Run
Gilbert Creek	2.8/Mouth of Ivory Run
Ivory Run	___/Head of Ivory Run
Ivory Run	0.0/Mouth of Ivory Run
Gilbert Creek	2.8/Mouth of Ivory Run
Gilbert Creek	1.6/Mouth of Ford Run
Ford Run	___/Head of Ford Run
Ford Run	0.0/Mouth of Ford Run
Gilbert Creek	1.6/Mouth of Ford Run
Gilbert Creek	1.3/Mouth of Oden Run

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway)	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway)
1 2 3 4 5 6	1 2 3 4 5 6
Oden Run	___/Head of Oden Run
Oden Run	0.0/Mouth of Oden Run
Gilbert Creek	1.3/Mouth of Oden Run
Gilbert Creek	0.5/Mouth of Lancaster Run
Lancaster Run	___/Head of Lancaster Run
Lancaster Run	0.0/Mouth of Lancaster Run
Gilbert Creek	0.5/Mouth of Lancaster Run
Gilbert Creek	0.01/Bridge, Md. Highway #234
Gilbert Creek	___/Outfall, Southern Maryland Correction Camp
Gilbert Creek	0.0/Mouth of Gilbert Creek
Newport Run	2.3/Mouth of Gilbert Creek
Newport Run	2.0/St. Clair Gut
Newport Run	1.9/Hickory Gut
Newport Run	0.0/Mouth of Newport Run
Wicomico River	12.0/Mouth of Newport Run
Wicomico River	11.3/Mud Cove
Wicomico River	10.9/Lloyd Drain
Wicomico River	10.8/Forrest Cove
Wicomico River	10.4/Mouth of Persimmon Point Creek
Persimmon Pt. Creek	___/Head of Persimmon Pt. Creek
Persimmon Pt. Creek	0.0/Mouth of Persimmon Pt. Creek
Wicomico River	10.4/Mouth of Persimmon Point Creek
Wicomico River	10.1/Mouth of Budds Creek, St. Marys Co.
Budds Creek	___/Head of Budds Creek
Budds Creek	2.6/Bridge, Md. Highway #234
Budds Creek	0.4/Mouth of Burroughs Run
Burroughs Run	___/Head of Burroughs Run
Burroughs Run	0.4/Mouth of Jenkins Run
Jenkins Run	___/Head of Jenkins Run
Jenkins Run	0.0/Mouth of Jenkins Run
Burroughs Run	0.4/Mouth of Jenkins Run
Burroughs Run	0.0/Mouth of Burroughs Run
Budds Creek	0.4/Mouth of Burroughs Run
Budds Creek	0.0/Mouth of Budds Creek
Wicomico River	10.1/Mouth of Budds Creek
Wicomico River	9.4/Mouth of Luckton Run
Luckton Run	___/Head of Luckton Run
Luckton Run	0.0/Mouth of Luckton Run
Wicomico River	9.4/Mouth of Luckton Run
Wicomico River	7.0/Mouth of Chaptico Bay
Chaptico Bay	3.9/Head of Chaptico Bay
Chaptico Bay	3.9/Mouth of Chaptico Creek
Chaptico Creek	7.7/Head of Chaptico Creek
Chaptico Creek	1.5/Bridge,
Chaptico Creek	0.8/Mouth of Hayden Run
Hayden Run	___/Head of Hayden Run
Hayden Run	0.0/Mouth of Hayden Run

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Chaptico Creek	0.8/Mouth of Hayden Run
Chaptico Creek	0.8/Gaging Station at Chaptico, Md. (D.A. 10.7)
Chaptico Creek	0.2/Mouth of Coffee Hill Run
Coffee Hill Run	___/Head of Coffee Hill Run
Coffee Hill Run	0.0/Mouth of Coffee Hill Run
Chaptico Creek	0.2/Mouth of Coffee Hill Run
Chaptico Creek	0.0/Mouth of Chaptico Creek
Chaptico Bay	3.9/Mouth of Chaptico Creek
Chaptico Bay	2.0/Mouth of Bull Run
Bull Run	___/Head of Bull Run
Bull Run	0.0/Mouth of Bull Run
Chaptico Bay	2.0/Mouth of Bull Run
Chaptico Bay	0.0/Mouth of Chaptico Bay
Wicomico River	7.0/Mouth of Chaptico Bay
Wicomico River	6.6/Mouth of Maddox Creek
Maddox Creek	___/Head of Maddox Creek
Maddox Creek	0.0/Mouth of Maddox Creek
Wicomico River	6.6/Mouth of Maddox Creek
Wicomico River	6.1/Mouth of Dolly Boarmans Creek
Dolly Boarmans Creek	___/Head of Dolly Boarmans Creek
Dolly Boarmans Creek	0.0/Mouth of Dolly Boarmans Creek
Wicomico River	6.1/Mouth of Dolly Boarmans Creek
Wicomico River	4.5/Mouth of Manahowie Creek
Manahowie Creek	___/Head of Manahowie Creek
Manahowie Creek	0.0/Mouth of Manahowie Creek
Wicomico River	4.5/Mouth of Manahowie Creek
Wicomico River	4.1/Mouth of Hatton Creek
Hatton Creek	___/Head of Hatton Creek
Hatton Creek	0.0/Mouth of Hatton Creek
Wicomico River	4.1/Mouth of Hatton Creek
Wicomico River	3.2/Mouth of Charleston Creek
Charleston Creek	___/Head of Charleston Creek
Charleston Creek	0.0/Mouth of Charleston Creek
Wicomico River	3.2/Mouth of Charleston Creek
Wicomico River	3.1/Mouth of Bramleigh Creek
Bramleigh Creek	___/Head of Bramleigh Creek
Bramleigh Creek	0.0/Mouth of Bramleigh Creek
Wicomico River	3.1/Mouth of Bramleigh Creek
Wicomico River	2.2/Mouth of Mill Creek
Mill Creek	___/Head of Mill Creek
Mill Creek	0.0/Mouth of Mill Creek
Wicomico River	2.2/Mouth of Mill Creek
Wicomico River	1.6/Bushwood Cove
Wicomico River	0.7/Junction with Neale Sound
Wicomico River	0.0/Mouth of Wicomico River (D.A. 246.7)
POTOMAC RIVER	35.1/Mouth of Wicomico River, Md.

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
POTOMAC RIVER	33.9/Mouth of The Big Meadow, Va.
The Big Meadow	____/Head of The Big Meadow
The Big Meadow	0.0/Mouth of The Big Meadow
POTOMAC RIVER	33.9/Mouth of The Big Meadow
POTOMAC RIVER	33.3/St. Catherine Island
POTOMAC RIVER	33.1/Mouth of The Little Meadow
The Little Meadow	____/Head of The Little Meadow
The Little Meadow	0.0/Mouth of The Little Meadow
POTOMAC RIVER	33.1/Mouth of The Little Meadow
POTOMAC RIVER	32.8/Mouth of St. Catherine Sound
St. Catherine Sound	1.2/Head of St. Catherine Sound
St. Catherine Sound	1.2/Mouth of Whites Neck Creek
Whites Neck Creek	____/Head of Whites Neck Creek
Whites Neck Creek	0.2/Mouth of Avenue Branch
Avenue Branch	____/Head of Avenue Branch
Avenue Branch	0.0/Mouth of Avenue Branch
Whites Neck Creek	0.2/Mouth of Avenue Branch
Whites Neck Creek	0.0/Mouth of Whites Neck Creek
St. Catherine Sound	1.2/Mouth of Whites Neck Creek
St. Catherine Sound	0.0/Mouth of St. Catherine Sound
POTOMAC RIVER	32.8/Mouth of St. Catherine Sound
POTOMAC RIVER	32.6/Mouth of Stratford Mill Run
Stratford Mill Run	____/Head of Stratford Mill Run
Stratford Mill Run	0.0/Mouth of Stratford Mill Run
POTOMAC RIVER	32.6/Mouth of Stratford Mill Run
POTOMAC RIVER	32.5/Mouth of Kentucky Run
Kentucky Run	____/Head of Kentucky Run
Kentucky Run	0.0/Mouth of Kentucky Run
POTOMAC RIVER	32.5/Mouth of Kentucky Run
POTOMAC RIVER	31.4/Mouth of Dukeharts Creek, Md.
Dukeharts Creek	____/Head of Dukeharts Creek
Dukeharts Creek	0.0/Mouth of Dukeharts Creek
POTOMAC RIVER	31.4/Mouth of Dukeharts Creek
POTOMAC RIVER	30.5/Mouth of Haulover Inlet, Va.
Haulover Inlet	____/Head of Haulover Inlet
Haulover Inlet	0.0/Mouth of Haulover Inlet
POTOMAC RIVER	30.5/Mouth of Haulover Inlet
POTOMAC RIVER	29.8/Blakiston Island
POTOMAC RIVER	29.3/Mouth of St. Clement Bay, Md.
St. Clement Bay	____/Head of St. Clement Bay
St. Clement Bay	____/Mouth of St. Clement Creek
St. Clement Creek	____/Head of St. Clement Creek
St. Clement Creek	0.0/Mouth of St. Clement Creek
St. Clement Bay	____/Mouth of St. Clement Creek
St. Clement Bay	0.2/Mouth of St. Patrick Creek
St. Patrick Creek	____/Head of St. Patrick Creek
St. Patrick Creek	0.1/Mouth of Back Creek

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Back Creek	____/Head of Back Creek
Back Creek	0.0/Mouth of Back Creek
St. Patrick Creek	0.1/Mouth of Back Creek
St. Patrick Creek	0.0/Mouth of St. Patrick Creek
St. Clement Bay	0.2/Mouth of St. Patrick Creek
St. Clement Bay	0.0/Mouth of St. Clement Bay (D.A. 21.9)
POTOMAC RIVER	29.3/Mouth of St. Clement Bay
POTOMAC RIVER	28.7/Mouth of Nomini Bay, Va.
Nomini Bay	1.9/Head of Nomini Bay
Nomini Bay	1.9/Mouth of Nomini Creek
Nomini Creek	____/Head of Nomini Creek
Nomini Creek	0.3/Mouth of Buckner Creek
Buckner Creek	____/Head of Buckner Creek
Buckner Creek	0.0/Mouth of Buckner Creek
Nomini Creek	0.3/Mouth of Buckner Creek
Nomini Creek	0.0/Mouth of Nomini Creek
Nomini Bay	1.9/Mouth of Nomini Creek
Nomini Bay	1.5/Mouth of Currioman Bay
Currioman Bay	____/Head of Currioman Bay
Currioman Bay	0.0/Mouth of Currioman Bay
Nomini Bay	1.5/Mouth of Currioman Bay
Nomini Bay	0.0/Mouth of Nomini Bay
POTOMAC RIVER	28.7/Mouth of Nomini Bay
POTOMAC RIVER	27.2/Mouth of Breton Bay, Md.
Breton Bay	____/Head of Breton Bay
Breton Bay	____/Mouth of Town Run
Town Run	____/Head of Town Run
Town Run	____/Outfall, Leonardtown
Town Run	____/Outfall, Leonardtown Sand & Gravel Co.
Town Run	0.0/Mouth of Town Run
Breton Bay	____/Mouth of Town Run
Breton Bay	____/Mouth of Unnamed Tributary
Unnamed Tributary	____/Head of Unnamed Tributary
Unnamed Tributary	____/Outfall, Leonardtown Sand and Gravel Co.
Unnamed Tributary	0.0/Mouth of Unnamed Tributary
Breton Bay	____/Mouth of Unnamed Tributary
Breton Bay	0.0/Mouth of Breton Bay
POTOMAC RIVER	27.2/Mouth of Breton Bay
POTOMAC RIVER	26.8/Herring Pond, Va.
POTOMAC RIVER	25.2/Mouth of Lower Machodoc Creek
Lower Machodoc Creek	____/Head of Lower Machodoc Creek
Lower Machodoc Creek	2.0/Mouth of Glebe Creek
Glebe Creek	____/Head of Glebe Creek
Glebe Creek	0.3/Mouth of Weatherall Creek
Weatherall Creek	____/Head of Weatherall Creek
Weatherall Creek	0.0/Mouth of Weatherall Creek

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Glebe Creek	0.3/Mouth of Weatherall Creek
Glebe Creek	0.0/Mouth of Glebe Creek
Lower Machodoc Creek	2.0/Mouth of Glebe Creek
Lower Machodoc Creek	1.4/Bellfield Cove
Lower Machodoc Creek	1.1/Mouth of Cabin Point Creek
Cabin Point Creek	___/Head of Cabin Point Creek
Cabin Point Creek	0.0/Mouth of Cabin Point Creek
Lower Machodoc Creek	1.1/Mouth of Cabin Point Creek
Lower Machodoc Creek	0.2/Bettys Pond
Lower Machodoc Creek	0.0/Mouth of Lower Machodoc Creek
POTOMAC RIVER	25.2/Mouth of Lower Machodoc Creek
POTOMAC RIVER	24.7/Mouth of Medley Creek, Md.
Medley Creek	___/Head of Medley Creek
Medley Creek	0.0/Mouth of Medley Creek
POTOMAC RIVER	24.7/Mouth of Medley Creek
POTOMAC RIVER	23.7/Mouth of Flood Creek, Md.
Flood Creek	___/Head of Flood Creek
Flood Creek	0.0/Mouth of Flood Creek
POTOMAC RIVER	23.7/Mouth of Flood Creek
POTOMAC RIVER	22.7/Mouth of Belvedere Creek
Belvedere Creek	___/Head of Belvedere Creek
Belvedere Creek	0.0/Mouth of Belvedere Creek
POTOMAC RIVER	22.7/Mouth of Belvedere Creek
POTOMAC RIVER	22.6/Mouth of Poplar Hill Creek
Poplar Hill Creek	___/Head of Poplar Hill Creek
Poplar Hill Creek	1.6/Bridge, Highway #244
Poplar Hill Creek	0.0/Mouth of Poplar Hill Creek
POTOMAC RIVER	22.6/Mouth of Poplar Hill Creek
POTOMAC RIVER	21.8/Mouth of Blake Creek
Blake Creek	___/Head of Blake Creek
Blake Creek	1.2/Mouth of Talton Branch
Talton Branch	___/Head of Talton Branch
Talton Branch	0.0/Mouth of Talton Branch
Blake Creek	1.2/Mouth of Talton Branch
Blake Creek	0.0/Mouth of Blake Creek
POTOMAC RIVER	21.8/Mouth of Blake Creek
POTOMAC RIVER	21.3/Blackbeard Pond, Va.
POTOMAC RIVER	21.1/Mouth of Lane Pond & Creek, Md.
Lane Pond & Creek	___/Head of Lane Pond & Creek
Lane Pond & Creek	0.0/Mouth of Lane Pond & Creek
POTOMAC RIVER	21.1/Mouth of Lane Pond & Creek
POTOMAC RIVER	20.4/Mouth of Herring Creek
Herring Creek	___/Head of Herring Creek
Herring Creek	2.6/Bridge, Md. Highway #249
Herring Creek	2.5/Mouth of Redman Branch
Redman Branch	___/Head of Redman Branch
Redman Branch	0.0/Mouth of Redman Branch
Herring Creek	2.5/Mouth of Redman Branch

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Herring Creek	2.4/Mouth of Woodland Branch
Woodland Branch	____/Head of Woodland Branch
Woodland Branch	0.1/Bridge, Md. Highway #249
Woodland Branch	0.0/Mouth of Woodland Branch
Herring Creek	2.4/Mouth of Woodland Branch
Herring Creek	2.3/Bridge, Md. Highway #250
Herring Creek	2.0/Mouth of Glebe Branch
Glebe Branch	____/Head of Glebe Branch
Glebe Branch	0.3/Bridge, Md. Highway #250
Glebe Branch	0.0/Mouth of Glebe Branch
Herring Creek	2.0/Mouth of Glebe Branch
Herring Creek	1.2/Mouth of Springer Creek
Springer Creek	____/Head of Springer Creek
Springer Creek	0.8/Bridge, Md. Highway #249
Springer Creek	0.0/Mouth of Springer Creek
Herring Creek	1.2/Mouth of Springer Creek
Herring Creek	1.0/Mouth of Big Duke Creek
Big Duke Creek	____/Head of Big Duke Creek
Big Duke Creek	0.0/Mouth of Big Duke Creek
Herring Creek	1.0/Mouth of Big Duke Creek
Herring Creek	0.6/Tall Timbers Cove
Herring Creek	0.3/McKay Cove
Herring Creek	0.0/Mouth of Herring Creek
POTOMAC RIVER	20.4/Mouth of Herring Creek, Md.
POTOMAC RIVER	20.2/Rices Pond, Va.
POTOMAC RIVER	18.0/Mouth of Gardner Creek, Va.
Gardner Creek	____/Head of Gardner Creek
Gardner Creek	0.0/Mouth of Gardner Creek
POTOMAC RIVER	18.0/Mouth of Gardner Creek
POTOMAC RIVER	17.9/Mouth of Piney Point Creek, Md.
Piney Point Creek	____/Head of Piney Point Creek
Piney Point Creek	____/Outfall, L. P. Steuart & Bros. Ind.
Piney Point Creek	____/Outfall, Hotel, Piney Point
Piney Point Creek	0.0/Mouth of Piney Point Creek
POTOMAC RIVER	17.9/Mouth of Piney Point Creek
POTOMAC RIVER	17.9/Outfall, Marina & Homes, Piney Point
POTOMAC RIVER	17.7/Mouth of Jackson Creek, Va.
Jackson Creek	____/Head of Jackson Creek
Jackson Creek	0.0/Mouth of Jackson Creek
POTOMAC RIVER	17.7/Mouth of Jackson Creek
POTOMAC RIVER	16.8/Mouth of Bonum Creek
Bonum Creek	____/Head of Bonum Creek
Bonum Creek	0.0/Mouth of Bonum Creek
POTOMAC RIVER	16.8/Mouth of Bonum Creek
POTOMAC RIVER	12.7/Mouth of Yeocomico River
Yeocomico River	3.1/Head of Yeocomico River
Yeocomico River	3.1/Mouth of Shannon Branch
Shannon Branch	____/Head of Shannon Branch

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Shannon Branch	1.1/Bridge
Shannon Branch	0.0/Mouth of Shannon Branch
Yeocomico River	3.1/Mouth of Shannon Branch
Yeocomico River	2.5/Mouth of White Point Creek
White Point Creek	___/Head of White Point Creek
White Point Creek	0.0/Mouth of White Point Creek
Yeocomico River	2.5/Mouth of White Point Creek
Yeocomico River	1.3/Mouth of West Yeocomico River
West Yeocomico River	___/Head of West Yeocomico River
West Yeocomico River	1.8/Mouth of Kinsale Branch
Kinsale Branch	___/Head of Kinsale Branch
Kinsale Branch	___/Outfall, Kinsale Canning Co., Va.
Kinsale Branch	0.0/Mouth of Kinsale Branch
West Yeocomico River	1.8/Mouth of Kinsale Branch
West Yeocomico River	1.3/Mouth of Hampton Hall Branch
Hampton Hall Branch	___/Head of Hampton Hall Branch
Hampton Hall Branch	1.8/Bridge, Va. Highway #202
Hampton Hall Branch	0.0/Mouth of Hampton Hall Branch
West Yeocomico River	1.3/Mouth of Hampton Hall Branch
West Yeocomico River	0.9/Long Cove
West Yeocomico River	0.2/Mouth of Wilkins Creek
Wilkins Creek	___/Head of Wilkins Creek
Wilkins Creek	0.0/Mouth of Wilkins Creek
West Yeocomico River	0.2/Mouth of Wilkins Creek
West Yeocomico River	0.0/Mouth of West Yeocomico River
Yeocomico River	1.3/Mouth of West Yeocomico River
Yeocomico River	1.1/Mouth of South Yeocomico River
South Yeocomico River	___/Head of South Yeocomico River
South Yeocomico River	1.6/Dungan Cove
South Yeocomico River	1.4/Mouth of Lodge Creek
Lodge Creek	___/Head of Lodge Creek
Lodge Creek	0.0/Mouth of Lodge Creek
South Yeocomico River	1.4/Mouth of Lodge Creek
South Yeocomico River	1.1/Palmer Cove
South Yeocomico River	0.9/Mouth of Mill Creek
Mill Creek	___/Head of Mill Creek
Mill Creek	0.3/Drum Cove
Mill Creek	0.0/Mouth of Mill Creek
South Yeocomico River	0.9/Mouth of Mill Creek
South Yeocomico River	0.1/Mouth of Cornish Creek
Cornish Creek	___/Head of Cornish Creek
Cornish Creek	0.0/Mouth of Cornish Creek
South Yeocomico River	0.1/Mouth of Cornish Creek
South Yeocomico River	0.0/Mouth of South Yeocomico River
Yeocomico River	1.1/Mouth of South Yeocomico River
Yeocomico River	0.5/Thicket Point Bay
Yeocomico River	___/Outfall, W.S. Courtney & Son, Munday Pt.
Yeocomico River	0.0/Mouth of Yeocomico River
POTOMAC RIVER	12.7/Mouth of Yeocomico River

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
POTOMAC RIVER	11.3/Mouth of St. Marys River, Md.
St. Marys River	____/Head of St. Marys River
St. Marys River	13.2/Mouth of Western Branch
Western Branch	____/Head of Western Branch
Western Branch	0.0/Mouth of Western Branch
St. Marys River	13.2/Mouth of Western Branch
St. Marys River	12.0/Md. Highway #5
St. Marys River	12.0/Gaging Station at Great Mills, Md. (D. A. 24.0)
St. Marys River	11.9/Mouth of Johns Creek
Johns Creek	____/Head of Johns Creek
Johns Creek	1.5/Bridge, Md. Highway #249
Johns Creek	0.0/Mouth of Johns Creek
St. Marys River	11.9/Mouth of Johns Creek
St. Marys River	11.7/Mouth of Lennie Creek
Lennie Creek	____/Head of Lennie Creek
Lennie Creek	0.0/Mouth of Lennie Creek
St. Marys River	11.7/Mouth of Lennie Creek
St. Marys River	10.2/Mouth of Warehouse Run
Warehouse Run	____/Head of Warehouse Run
Warehouse Run	0.8/Mouth of Calloway Creek
Calloway Creek	____/Head of Calloway Creek
Calloway Creek	0.0/Mouth of Calloway Creek
Warehouse Run	0.8/Mouth of Calloway Creek
Warehouse Run	0.1/Mouth of Greens Rest Run
Greens Rest Run	____/Head of Greens Rest Run
Greens Rest Run	0.0/Mouth of Greens Rest Run
Warehouse Run	0.1/Mouth of Greens Rest Run
Warehouse Run	0.0/Mouth of Warehouse Run
St. Marys River	10.2/Mouth of Warehouse Run
St. Marys River	9.2/Mouth of Eastern Branch
Eastern Branch	____/Head of Eastern Branch
Eastern Branch	1.7/Mouth of Penbrook Run
Penbrook Run	____/Head of Penbrook Run
Penbrook Run	0.0/Mouth of Penbrook Run
Eastern Branch	1.7/Mouth of Penbrook Run
Eastern Branch	1.1/Md. Highway #5
Eastern Branch	0.7/Mouth of Hillton Run
Hillton Run	____/Head of Hillton Run
Hillton Run	0.0/Mouth of Hillton Run
Eastern Branch	0.7/Mouth of Hillton Run
Eastern Branch	0.0/Mouth of Eastern Branch
St. Marys River	9.2/Mouth of Eastern Branch
St. Marys River	8.3/Mouth of Craney Creek
Craney Creek	1.4/Head of Craney Creek
Craney Creek	0.0/Mouth of Craney Creek
St. Marys River	8.3/Mouth of Craney Creek
St. Marys River	7.8/Martin Cove

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
St. Marys River	6.6/Bettys Cove
St. Marys River	6.6/Mouth of Fisherman Creek
Fisherman Creek	____/Head of Fisherman Creek
Fisherman Creek	0.05/Bridge, Md. Highway #5
Fisherman Creek	0.0/Mouth of Fisherman Creek
St. Marys River	6.6/Mouth of Fisherman Creek
St. Marys River	5.0/Mouth of Wheatley Creek
Wheatley Creek	____/Head of Wheatley Creek
Wheatley Creek	0.0/Mouth of Wheatley Creek
St. Marys River	5.0/Mouth of Wheatley Creek
St. Marys River	4.4/Mouth of Cooper Creek
Cooper Creek	4.4/Head of Cooper Creek
Cooper Creek	0.0/Mouth of Cooper Creek
St. Marys River	4.4/Mouth of Cooper Creek
St. Marys River	3.4/Mouth of St. Inigoes Creek
St. Inigoes Creek	____/Head of St. Inigoes Creek
St. Inigoes Creek	2.2/Bridge, Md. Highway #5
St. Inigoes Creek	1.8/Mouth of Broom Creek
Broom Creek	____/Head of Broom Creek
Broom Creek	0.5/Bridge, Md. Highway #5
Broom Creek	0.0/Mouth of Broom Creek
St. Inigoes Creek	1.8/Mouth of Broom Creek
St. Inigoes Creek	1.4/Mouth of Church Cove & Creek
Church Cove & Creek	____/Head of Church Cove & Creek
Church Cove & Creek	1.1/Bridge, Md. Highway #5
Church Cove & Creek	0.0/Mouth of Church Cove & Creek
St. Inigoes Creek	1.4/Mouth of Church Cove & Creek
St. Inigoes Creek	1.1/Mouth of Milburn Creek
Milburn Creek	____/Head of Milburn Creek
Milburn Creek	0.0/Mouth of Milburn Creek
St. Inigoes Creek	1.1/Mouth of Milburn Creek
St. Inigoes Creek	0.8/Lucas Cove
St. Inigoes Creek	0.7/Molls Cove
St. Inigoes Creek	0.0/Mouth of St. Inigoes Creek
St. Marys River	3.4/Mouth of St. Inigoes Creek
St. Marys River	3.1/Mouth of Carthagena Creek
Carthagena Creek	____/Head of Carthagena Creek
Carthagena Creek	2.7/Bridge
Carthagena Creek	1.3/Wreck Cove
Carthagena Creek	1.1/Mouth of Adams Creek
Adams Creek	____/Head of Adams Creek
Adams Creek	0.0/Mouth of Adams Creek
Carthagena Creek	1.1/Mouth of Adams Creek
Carthagena Creek	0.7/Barnes Cove
Carthagena Creek	0.6/Fodder House Cove
Carthagena Creek	0.0/Mouth of Carthagena Creek
St. Marys River	3.1/Mouth of Carthagena Creek
St. Marys River	2.9/Langley Hollow

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
St. Marys River	1.4/Mouth of St. George Creek
St. George Creek	___/Head of St. George Creek
St. George Creek	3.7/Locust Grove Cove
St. George Creek	2.8/Mouth of Schoolhouse Branch
Schoolhouse Branch	___/Head of Schoolhouse Branch
Schoolhouse Branch	0.0/Mouth of Schoolhouse Branch
St. George Creek	2.8/Mouth of Schoolhouse Branch
St. George Creek	2.3/Tarkill Cove
St. George Creek	1.7/Taylor Cove
St. George Creek	0.5/Price Cove
St. George Creek	0.0/Mouth of St. George Creek
St. Marys River	1.4/Mouth of St. George Creek
St. Marys River	1.0/Sage Pond
St. Marys River	0.4/Mouth of Island Creek
Island Creek	___/Head of Island Creek
Island Creek	0.0/Mouth of Island Creek
St. Marys River	0.4/Mouth of Island Creek
St. Marys River	___/Outfall, St. Marys City
St. Marys River	0.0/Mouth of St. Marys River (D.A. 72.0)
POTOMAC RIVER	11.3/Mouth of St. Marys River, Md.
POTOMAC RIVER	11.1/Mouth of Garners Creek, Va.
Garners Creek	___/Head of Garners Creek
Garners Creek	0.0/Mouth of Garners Creek
POTOMAC RIVER	11.1/Mouth of Garners Creek
POTOMAC RIVER	9.9/Mouth of Smith Creek, Md.
Smith Creek	___/Head of Smith Creek
Smith Creek	0.7/Mouth of Jutland Creek
Jutland Creek	___/Head of Jutland Creek
Jutland Creek	0.7/Fox Harbour
Jutland Creek	0.0/Mouth of Jutland Creek
Smith Creek	0.7/Mouth of Jutland Creek
Smith Creek	0.0/Mouth of Smith Creek
POTOMAC RIVER	9.9/Mouth of Smith Creek
POTOMAC RIVER	9.7/Judith Sound, Va.
POTOMAC RIVER	9.2/Mouth of Calvert Bay & Creek
Calvert Bay & Creek	___/Head of Calvert Bay & Creek
Calvert Bay & Creek	0.0/Mouth of Calvert Bay & Creek
POTOMAC RIVER	9.2/Mouth of Calvert Bay & Creek
POTOMAC RIVER	8.7/Rowley Bay
POTOMAC RIVER	8.5/Mouth of Harry James Creek
Harry James Creek	___/Head of Harry James Creek
Harry James Creek	0.0/Mouth of Harry James Creek
POTOMAC RIVER	8.5/Mouth of Harry James Creek
POTOMAC RIVER	8.0/Mouth of Coan River, Va.
Coan River	___/Head of Coan River
Coan River	2.0/Boathouse Pond
Coan River	0.2/Mouth of The Glebe
The Glebe	___/Head of The Glebe
The Glebe	0.0/Mouth of The Glebe
Coan River	0.2/Mouth of The Glebe

DISTANCES FROM MOUTH OF WATERWAY AND DRAINAGE AREAS FOR SPECIFIC LOCATIONS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 2 3 4 5 6
Coan River	0.1/Mouth of Kingscote Creek
Kingscote Creek	___/Head of Kingscote Creek
Kingscote Creek	0.0/Mouth of Kingscote Creek
Coan River	0.1/Mouth of Kingscote Creek
Coan River	___/Outfall, J.A. Lewis, Avalon, Va.
Coan River	0.0/Mouth of Coan River
POTOMAC RIVER	8.0/Mouth of Coan River
POTOMAC RIVER	7.8/Mouth of Biscoe Creek, Md.
Biscoe Creek	___/Head of Biscoe Creek
Biscoe Creek	0.0/Mouth of Biscoe Creek
POTOMAC RIVER	7.8/Mouth of Biscoe Creek
POTOMAC RIVER	7.2/Mouth of Potter Creek
Potter Creek	___/Head of Potter Creek
Potter Creek	0.0/Mouth of Potter Creek
POTOMAC RIVER	7.2/Mouth of Potter Creek
POTOMAC RIVER	6.7/Mouth of Cod Creek, Va.
Cod Creek	___/Head of Cod Creek
Cod Creek	0.0/Mouth of Cod Creek
POTOMAC RIVER	6.7/Mouth of Cod Creek
POTOMAC RIVER	6.0/Mouth of Point Lookout Creek, Md.
Point Lookout Creek	___/Head of Point Lookout Creek
Point Lookout Creek	0.0/Mouth of Point Lookout Creek
POTOMAC RIVER	6.0/Mouth of Point Lookout Creek
POTOMAC RIVER	5.6/Mouth of Presley Creek, Va.
Presley Creek	___/Head of Presley Creek
Presley Creek	0.0/Mouth of Presley Creek
POTOMAC RIVER	5.6/Mouth of Presley Creek
POTOMAC RIVER	4.6/Mouth of Hull Creek
Hull Creek	___/Head of Hull Creek
Hull Creek	0.0/Mouth of Hull Creek
POTOMAC RIVER	4.6/Mouth of Hull Creek
POTOMAC RIVER	2.9/Mouth of Cubitt Creek
Cubitt Creek	___/Head of Cubitt Creek
Cubitt Creek	0.0/Mouth of Cubitt Creek
POTOMAC RIVER	2.9/Mouth of Cubitt Creek
POTOMAC RIVER	1.6/Condit Pond, Va.
POTOMAC RIVER	1.0/Mouth of Hack Creek
Hack Creek	___/Head of Hack Creek
Hack Creek	0.0/Mouth of Hack Creek
POTOMAC RIVER	1.0/Mouth of Hack Creek
POTOMAC RIVER	0.3/Flag Pond, Va.
POTOMAC RIVER	0.0/Mouth of Potomac River (D.A. 14,670)

D. A. Drainage Area, square miles

January, 1965

APPENDIX B

WATER-QUALITY STATIONS, WATER WITHDRAWN, WASTES DISCHARGED AND STREAMFLOWS

See Description of Appendices (Appendix B) in the General Reference Section for a narrative discussion of this material.

Appendix B

POTOMAC RIVER DRAINAGE BASIN

North Branch SUB-BASIN

WATER-QUALITY STATIONS, WATER WITHDRAWN, WASTE DISCHARGED, AND STREAM FLOWS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 - 2 - 3 - 4 - 5 - 6	Water intake mgd	Waste discharge mgd	Daily Stream Flow, cfs Minimum	Daily Stream Flow, cfs Lower 5 Percentile
POTOMAC RIVER					
North Branch	285.1-____/Intake and Outfall, Davis Coal Company	0.500	0.500 (Ind.)		
North Branch	285.1-____/Outfall, Bayard, W. Va.		0.067		
Buffalo Creek	285.1-____-____/Intake, Fairfax Coal Co., Bayard	0.800			
Buffalo Creek	285.1-87.0 -____/Outfall, Fairfax Coal Company		0.800 (Ind.)		
North Branch	285.1-81.75/Gaging Station, Steyer, Md.			X	X
Wolfden Run	285.1-70.4 -____/Intake, Shallmar, Md.	X			
North Branch	285.1-68.9 /Outfall, Kitzmiller, Md.		0.072		
North Branch	285.1-68.9 /Gaging Station at Kitzmiller, Md.			4.6	35.0
Three Forks Run	285.1-65.7 - 2.0/Intake, Vindex, Md.	X			
Savage River	285.1-53.5 -____/Intake, Frostburg, Md.	0.500[1]			
Savage River	285.1-53.5 -10.0/Gaging Station near Barton, Md.			0.7	3.0
Crabtree Creek	285.1-53.5 - 4.8-7.3/Intake, B & O Railroad	X			
Crabtree Creek	285.1-53.5 - 4.8-1.6/Gaging Station near Swanton, Md.			0.8	1.8
Savage River	285.1-53.5 - 3.7/Intake, Westernport, Md.	0.475			
Savage River	285.1-53.5 - 3.7/Gaging Station near Bloomington, Md.			5.4	43.0
Savage River	285.1-53.5 -____/Intake, Piedmont, W. Va.	0.325			
North Branch	285.1-53.1 /Sampling Station, W. V. Pulp and Paper Co.			X	X
North Branch	285.1-53.0 /Gaging Station at Luke, Md.			6.0	78.0

POTOMAC RIVER — DRAINAGE BASIN

North Branch — SUB-Basin

WATER-QUALITY STATIONS, WATER WITHDRAWN, WASTE DISCHARGED, AND STREAM FLOWS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 - 2 - 3 - 4 - 5 - 6	Water intake mgd	Waste discharge mgd	Daily Stream Flow, cfs Minimum	Daily Stream Flow, cfs Lower 5 Percentile
North Branch	285.1-52.8/Outfall, W. V. Pulp & Paper Company		Cooling Water Only		
North Branch	285.1-52.7/Intake, W. V. Pulp & Paper Co.	40.000			
North Branch	285.1-___/Outfall, Piedmont, W. V.		0.290		
North Branch	285.1-52.4/Sampling Station, W. V. Pulp and Paper Company			X	X
Georges Creek	285.1-51.4-15.7/Outfall, Frostburg, Md.		0.400		
Sand Spring Run	285.1-51.4-15.5-3.4/Outfall, John Lotts Slaughterhouse		X		
Sand Spring Run	285.1-51.4-15.5-2.2/Outfall, Engle Bro. Slaughterhouse		X		
Sand Spring Run	285.1-51.4-15.5-1.5/Outfall, Frostburg		X		
Georges Creek	285.1-51.4-___/Intake & Outfall, Consolidated Coal Company	0.505	0.500(Ind.) 0.002		
Staub Run	285.1-51.4-12.5-___/Intake, Borden Shaft	0.050			
Woodland Creek	285.1-51.4-12.5-0.7-___/Intake, Lord, Md.	0.050			
Georges Creek	285.1-51.4-___/Outfall, Borden Shaft		0.005 0.500(Ind.)		
Georges Creek	285.1-51.4-___/Outfall, Dashiell Dairy		X		
Georges Creek	285.1-51.4-___/Intake and Outfall, Lona-Lonaconing, Md.	0.340[2]	0.090		
Bartlett Run	285.1-51.4-___-___/Intake, Barton, Md.	0.087			
Georges Creek	285.1-51.4-___/Outfall, Barton, Md.		0.030		
Georges Creek	285.1-51.4-1.25/Gaging Station at Franklin, Md.			X	5.2
Georges Creek	285.1-51.4- 0.1/Sampling Station, Upper Potomac River Waste Treatment Facility			X	X
North Branch	285.1-51.0/Outfall, Upper Potomac River Commission		20.400[3]		

POTOMAC RIVER — DRAINAGE BASIN

North Branch — SUB-BASIN

WATER-QUALITY STATIONS, WATER WITHDRAWN, WASTE DISCHARGED, AND STREAM FLOWS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 - 2 - 3 - 4 - 5 - 6	Water intake mgd	Waste discharge mgd	Daily Stream Flow, cfs Minimum	Daily Stream Flow, cfs Lower 5 Percentile
New Creek	285.1-46.0-___/Intake, Keyser, W. V.	0.500			
New Creek	285.1-46.0-___/Intake, Royal Dairy, Keyser, W. V.	0.035			
North Branch	285.1-___/Outfall, Keyser, W. V.		0.330		
North Branch	285.1-___/Outfall, Royal Dairy, W. V.		0.035 (Ind.)		
North Branch	285.1-45.9/Sampling Station, W. V. Pulp and Paper Company			X	X
North Branch	285.1-45.4/Sampling Station, W. V. Dept. of Natural Resources			X	X
North Branch	285.1-40.9/Sampling Station, W. V. Dept. of Natural Resources			X	X
North Branch	285.1-32.6/Gaging Station at Pinto, Md.			35.0	61.0
North Branch	285.1-32.5/Outfall, Hercules Powder Co.		Sanitary		
North Branch	285.1-___/Intake, Celanese Corp.	40.000			
North Branch	285.1-28.9/Sampling Station, Celanese Corp.			X	X
North Branch	285.1-28.4/Sampling Station, Celanese Corp.			X	X
North Branch	285.1-27.9/Outfall, Bowling Green, Allegany County Sanitary Comm.		0.180		
North Branch	285.1-27.2/Outfall, Celanese Corp. and Ancelle, Md.		3.600		
North Branch	285.1-27.2/Intake and Outfall, Potomac Edison Co., Ancelle, Md.	X	X		
North Branch	285.1-23.5/Outfall, Western Md. R.R. in Ridgely		X		
North Branch	285.1-___/Intake, Kelley-Springfield Tire Co.	2.900			
North Branch	285.1-23.4/Sampling Station, Kelley-Springfield Co.			X	X

POTOMAC RIVER DRAINAGE BASIN

North Branch SUB-BASIN

WATER-QUALITY STATIONS, WATER WITHDRAWN, WASTE DISCHARGED, AND STREAM FLOWS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 - 2 - 3 - 4 - 5 - 6	Water intake mgd	Waste discharge mgd	Daily Stream Flow, cfs Minimum	Daily Stream Flow, cfs Lower 5 Percentile
North Branch	285.1-22.8/Outfall, Kelley-Springfield Company		Cooling Water		
North Branch	285.1-____/Outfall, Kelley-Springfield Company		4.800		
North Branch	285.1-____/Intake & Outfall, Potomac Edison Co., Cumberland, Md.	43.200	X		
North Branch	285.1-____/Intake & Outfall, Potomac Edison Co., Cumberland, Md.	28.800	X		
Wills Creek Little Wills Creek	285.1-21.7-____-____/Intake and Outfall, Hyndman, Pa.	0.100	0.100		
Wills Creek	285.1-21.7-____/Gaging Station below Hyndman, Pa.			0.9	5.4
Wills Creek	285.1-21.7-____/Outfall, Wellersburg, Pa.		0.041		
Wills Creek	285.1-21.7- 4.1/Outfall, Frye Coal & Stone Company		X		
Wills Creek	285.1-21.7- 3.1/Intake & Outfall, Cumberland Cement Co.	0.288	0.288 (Ind.)		
Wills Creek	285.1-21.7-____/Intake & Outfall, Cumberland Coal Co.	0.005	0.005 0.500 (Ind.)		
Wills Creek	285.1-21.7-2.04/Gaging Station near Cumberland, Md.			10.0	23.0
Wills Creek	285.1-21.7- 1.5/Sampling Station, Kelley-Springfield Tire Co.			X	X
Chesapeake & Ohio Canal	285.1-21.7-____/Gaging Station at Cumberland			X	X
North Branch	285.1-____/Outfall, Ridgely, W. V.		0.038		
North Branch	285.1-19.9/Sampling Station, Cumberland, Md.			X	X

POTOMAC RIVER — DRAINAGE BASIN

North Branch — SUB-BASIN

WATER-QUALITY STATIONS, WATER WITHDRAWN, WASTE DISCHARGED, AND STREAM FLOWS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 - 2 - 3 - 4 - 5 - 6	Water intake mgd	Waste discharge mgd	Daily Stream Flow, cfs Minimum	Daily Stream Flow, cfs Lower 5 Percentile
North Branch	285.1-19.6/Gaging Station near Cumberland, Md.			38.0	102.0
North Branch	285.1-18.2/Outfall, Cumberland, Md.		5.000		
North Branch	285.1-____/Outfall, Union Tanning Co.		0.119 (Ind.)		
North Branch	285.1-____/Outfall, Cumberland Laundry Company		0.025 (Ind.)		
North Branch	285.1-____/Outfall, N. & G. Taylor Co.		0.100 (Ind.)		
Evitts Creek	285.1-17.5-____/Intake, Pennsylvania	5.500			
Evitts Creek	285.1-17.5-____/Gaging Station near Centerville, Pa.			1.5	2.9
Evitts Creek	285.1-17.5-____/Intake, Cumberland Md.	13.200			
Evitts Creek	285.1-17.5-____/Intake, Union Tanning Company	0.119			
Evitts Creek	285.1-17.5-____/Intake, Cumberland Laundry Company	0.025			
Evitts Creek	285.1-17.5-____/Intake, N. & G. Taylor Company	0.100			
Evitts Creek	285.1-17.5-____/Gaging Station near Cumberland, Md.			X	X
North Branch	285.1-____/Intake, Pittsburg Plate Glass	2.075			
North Branch	285.1-11.3/Outfall, Pittsburg Plate Glass		2.000 (Ind.)		
North Branch	285.1-11.1/Outfall, Pittsburg Plate Glass		0.075		
Patterson Creek	285.1- 9.0-____/Outfall, Burlington, W. V.		0.045		
Patterson Creek	285.1- 9.0-____/Outfall, Fort Ashley, W. V.		0.090		

POTOMAC RIVER — DRAINAGE BASIN

North Branch — SUB-BASIN

WATER-QUALITY STATIONS, WATER WITHDRAWN, WASTE DISCHARGED, AND STREAM FLOWS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 - 2 - 3 - 4 - 5 - 6	Water intake mgd	Waste discharge mgd	Daily Stream Flow, cfs	
				Minimum	Lower 5 Percentile
Patterson Creek	285.1-9.0-___/Outfall, Patterson Creek, W. V.		0.039		
Mill Run	285.1-1.4-___/Intake, Conda A. Smith	X			
North Branch	285.1-___/Outfall, Koppers Co., W. V.		0.003		

X Data not available.

October, 1964

ADDENDUM - APPENDIX B
NORTH BRANCH SUB-BASIN

WATER-QUALITY STATIONS, WATER WITHDRAWN, WASTES DISCHARGED, AND STREAM FLOWS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 - 2 - 3 - 4 - 5 - 6	Water intake mgd	Waste discharge mgd	Daily Stream Flow cfs Minimum	Daily Stream Flow cfs Lower 5 Percentile
Page 2					
POTOMAC RIVER					
North Branch	285.1-51.2/Outfall, Piedmont, W.Va.		0.190		
Page 3					
North Branch	285.1-45.4/Outfall Keyser, W. Va.				
Mill Run	285.1-35.0-___/Intake, Rawlings Heights				
North Branch	285.1-32.7/Outfall, Bel Air		0.030		
North Branch	285.1-32.6/Outfall, Bartons Dairy, Pinto				
North Branch	285.1-29.7/Outfall, Mason's Dairy Cresaptown		0.035		
North Branch	285.1-29.5/Outfall, Cresaptown		0.280		
North Branch	285.1-25.0/Outfall, Bowling Green		0.180		
Page 4					
Wills Creek	285.1-21.7-4.1/Outfall, Appalachia Stone Div. Martin Marietta Corp.				
Wills Creek	285.1-21.7-3.1/Outfall, Manley Sand Div. Martin Marietta Corp.				
Braddock Run	285.1-21.7-2.3-___/Outfall, LaVale, Md.				
Page 5					
North Branch					
Evitts Creek	285.1-17.5-2.0/Outfall, Growdenvale				

Appendix B

NORTH BRANCH, POTOMAC TO MONOCACY RIVER - DRAINAGE BASIN

WATER-QUALITY STATIONS, WATER WITHDRAWN, WASTES DISCHARGED, AND STREAM FLOWS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 - 2 - 3 - 4 - 5 - 6	Water intake mgd	Waste discharge mgd	Daily Stream flow, cfs	
				Minimum	Lower 5 Percentile
POTOMAC RIVER					
South Branch					
South Fork	285.1-57.0-0.0/Intake and Outfall, Moorefield, W. Virginia	.400	.170		
South Fork	285.1-57.0-0.0/Outfall, Rockingham Poultry Co., Moorefield, W. Va.		.180 Ind.		
South Fork	285.1-57.0-0.0/Outfall, Lowengart Tanning Co., Moorefield, W. Va.		.138 Ind.		
South Branch	285.1-___/Outfall, Franklin, W. Va.		.450		
South Branch	285.1-69.9/Intake and Outfall, Petersburg, W. Va.	.200	.180		
South Branch	285.1-___/Intake and Outfall, Romney, W.Va.	.150	.108		
South Branch	285.1-___/Intake and Outfall, School for Deaf, Romney, W. Va.	.040	.040		
South Branch	285.1-___/Gaging Station near Springfield W. Va.			x	x
Town Creek	282.5- 3.0/Gaging Station near Oldtown, Md.			x	5.0
Sawpit Run	282.5- 2.1-0.9/Gaging Station near Oldtown			x	0.0
POTOMAC RIVER	276.6/Gaging Station near Paw Paw, W. Va.			192	273
Cacapon River	247.9- 6.2/Gaging Station near Great Cacapon, W. Va.			x	x
Cacapon River	247.9- 0.3/Sampling Station			x	x
Cacapon River	247.9-___/Outfall, Lost River State Park, W. Va.		.020		
POTOMAC RIVER					
Little Tonoloway Creek	238.8- 3.2/Gaging Station near Hancock, Md.			x	0.1
Little Tonoloway Creek	238.8-1.0/Intake, Hancock, Md.	.400			
~~Tonoloway Creek~~	~~237.5-___/Outfall, Hancock, Md.~~		.150		

NORTH BRANCH, POTOMAC TO MONOCACY RIVER DRAINAGE BASIN

WATER-QUALITY STATIONS, WATER WITHDRAWN, WASTES DISCHARGED, AND STREAM FLOWS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 - 2 - 3 - 4 - 5 - 6	Water intake mgd	Waste discharge mgd	Daily Stream flow, cfs Minimum	Lower Percentile
POTOMAC RIVER	238.6/Gaging Station at Hancock, Md.			233.0	320.0
Dry Run					
Warm Spring Run	238.3- 0.6-7.0/Outfall, Berkeley Springs W. Va.		.170		
Warm Spring Run	238.3- 0.6-4.0/Intake and Outfall Penn Sand Glass Co.	.060	.060 .180Ind		
Warm Spring Run	238.3- 0.6-___/Outfall, Aulabaugh Bros. (seasonal)		.118Ind		
Tonoloway Creek	237.5- 0.8/Outfall, Hancock, Md.		.150		
Licking Creek	231.0-____/Gaging Station near Sylvan, P.			3.0	13.0
Back Creek	225.9-13.2/Gaging Station near Tomahawk, W. Va.			X	X
Back Creek	225.9- 8.3/Gaging Station near Jones Springs, W. Va.			X	X
Back Creek	225.9-____/Outfall, Jones Springs, W. Va.		.016		
Back Creek	225.9- 4.0/Outfall, Hedgeville, W.Va.		.047		
POTOMAC RIVER	212.5/Sampling Station above Williamsport, Md.			X	X
POTOMAC RIVER	212.0/Intake, Hagerstown Filter Plant	4.500			
POTOMAC RIVER	211.0/Outfall, Williamsport, Md.		.065		
POTOMAC RIVER	211.0/Sampling Station, Williamsport, Md.			X	X
Conococheague Creek	210.7-___/Gaging Station, Caledonia,Pa.			X	X
Hosack Run	210.7-___-___/Gaging Station at Caledonia, Pa.				
Conococheague Creek	210.7-___/Outfall, Scotland Orphanage, Pa.		.100		
Conococheague Creek	210.7-53.0/Intake and Outfall, Chambersburg, Pa.	3.000	1.500		

NORTH BRANCH, POTOMAC TO MONOCACY RIVER - DRAINAGE BASIN

WATER-QUALITY STATIONS, WATER WITHDRAWN, WASTES DISCHARGED, AND STREAM FLOWS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 - 2 - 3 - 4 - 5 - 6	Water intake mgd	Waste discharge mgd	Daily Stream flow, cfs Minimum	Daily Stream flow, cfs Lower Percentile
Conococheague Creek	210.7-53.0/Outfall, H.J. Heinz co., Chambersburg, Pa.		.30(1.5 Peak)		
Conococheague Creek	210.7-___/Intake and Outfall, Mercersburg, Pa.	.210	.185		

NORTH BRANCH, POTOMAC TO MONOCACY RIVER - DRAINAGE BASIN

WATER-QUALITY STATIONS, WATER WITHDRAWN, WASTES DISCHARGED, AND STREAM FLOWS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 - 2 - 3 - 4 - 5 - 6	Water intake mgd	Waste discharge mgd	Daily Stream flow, cfs Minimum	Daily Stream flow, cfs Lower 5 Percentile
Conococheague Creek	210.7-____/Intake and Outfall, Lowengart Tanning Co., Mercersburg, Pa.	X	.300 Ind.		
Conococheague Creek	210.7-32.0/Outfall, Greencastle, Pa.		.330		
Conococheague Creek	210.7-____/Outfall, Greencastle Packing Co.		Land		
Conococheague Creek	210.7-____/Outfall, S.G.Dixon TB Hospital, Pa.		.300		
Conococheague Creek	210.7-____/Outfall, Path Valley Esso		.025 Ind.		
Conococheague Creek	210.7-18.0/Gaging Station at Fairview, Md.			25	84
Conococheague Creek	210.7-____/Outfall, Kemps Mills, Md.		.003		
Conococheague Creek	210.7-____/Outfall, Williamsport, Md.		.030		
Conococheague Creek	210.7-____Intake and Outfall, W.D. Byron Co., Williamsport, Md.	0.210	.16 Coding .08 Ind.		
Conococheague Creek	210.7- 0.3/Sampling Station near Williamsport			x	x
POTOMAC RIVER	210.7/Intake and Outfall, Potomac Edison, Williamsport	172.800	x		
POTOMAC RIVER	210.0/Sampling Station below Williamsport			x	x
POTOMAC RIVER	205.4/Intake and Outfall, DuPont, Falling Waters, W. Va.	.500	.500(Cooling)		
Opequon Creek	202.0-____/Outfall, Winchester, Va.		2.530		
Opequon Creek	202.0-____/Outfall, O'Sullivan Rubber Co., Winchester		.012		
Opequon Creek	202.0-____/Intake and Outfall, Clearbrook Woolen Co., Clearbrook, Va.	.065	.065 Ind.		
Opequon Creek	202.0-____/Outfall, Middleway, Va.		.085		
Opequon Creek	202.0-____/Outfall, Inwood, Va.		.019		
Opequon Creek	202.0-____/Outfall, Musselman Canning Co., Inwood		.300 Ind.		
Opequon Creek	202.0-____/Outfall, Leetown, Va.		.033		

NORTH BRANCH, POTOMAC TO MONOCACY RIVER - DRAINAGE BASIN

WATER-QUALITY STATIONS, WATER WITHDRAWN, WASTES DISCHARGED, AND STREAM FLOWS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 - 2 - 3 - 4 - 5 - 6	Water intake mgd	Waste discharge mgd	Daily Stream flow, cfs	
				Minimum	Lower 5 Percentile
Opequon Creek	202.0-____/Outfall, Kearneyville, W. Va.		.078		
Opequon Creek	202.0- 8.3/Sampling Station			x	x
Opequon Creek	202.0-____/Outfall, Martinsburg, W. Va.		3.000		
Opequon Creek	202.0-____/Outfall, Natl. Fruit Co., Martinsburg		.380 Ind.		
Opequon Creek	202.0-____/Outfall, Interwoven Co., Martinsburg		.120 Ind.		
Opequon Creek	202.0-____/Outfall, Std. Lime & Stone Co., Martinsburg		.140 Ind.		
Opequon Creek	202.0-____/Outfall, Blair Limestone Co., Martinsburg		.125 Ind.		
Opequon Creek	202.0- 5.0/Gaging Station, Martinsburg, W.Va.			x	x
POTOMAC RIVER	187.6/Outfall, Sharpsburg, Md.		.100		
POTOMAC RIVER	183.0/Intake and Outfall, Shepherdstown, W. Va.	.090	.090		
POTOMAC RIVER	183.0/Intake and Outfall, Mere Sand and Gravel Co., Shepherdstown, W. Va.	.288	.288 Ind.		
POTOMAC RIVER	183.0/Gaging Station, Shepherdstown, W.Va.			252	595
Antietam Creek	180.2-____/Intake and Outfall, Fayetteville, Pa.	.065	.060		
Antietam Creek	180.2-____/Intake and Outfall, Waynesboro, Pa.	1.900	1.100		
Antietam Creek	180.2-____/Gaging Station nr. Waynesboro, Pa.			x	x
Antietam Creek	180.2-____/Intake, Scotland Orphange, Pa.	.100			
Antietam Creek	180.2-____/Outfall, E.V.B. Orphanage, Pa.		.021		
Antietam Creek	180.2-____/Intake, S.G.Dixon TB Hospital, Pa.	.170			

North Branch, Potomac to Monocacy River

WATER-QUALITY STATIONS, WATER WITHDRAWN, WASTES DISCHARGED, AND STREAM FLOWS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 - 2 - 3 - 4 - 5 - 6	Water intake mgd	Waste discharge mgd	Daily Stream flow, cfs Minimum	Lower 5 Percentile
Antietam Creek	180.2-23.8/Intake & Outfall, Municipal Electric Light Co.	33.400	33.400		
Unnamed tributary	180.2-23.7-___/Outfall, Western Md. R.R.		.150		
Unnamed tributary	180.2-23.7-___/Outfall, Potomac Creamery		x		
Antietam Creek	180.2-___/Sampling Station above Hagerstown, Md.			x	x
Antietam Creek	180.2-22.6/Outfall, Hagerstown, Md.		3.800		
Antietam Creek	180.2-21.4/Outfall, Funkstown, Md.		.075		
Antietam Creek	180.2-17.0/Sampling Station below Hagerstown, Md.				
Antietam Creek	180.2-14.4/Intake & Outfall, Roxbury Distillery			x	x
Antietam Creek	180.2-___/Outfall, Md. State Penitentiary		.009		
Antietam Creek	180.2-12.4/Outfall, Md. State Reformatory		.125		
Little Antietam Creek					
Unnamed tributary	180.2-7.4-1.8-___/Intake, Boonsboro, Md.				
Unnamed tributary	180.2-7.4-1.8-___/Outfall, Boonsboro, Md.		.120		
Little Antietam Creek	180.2-7.4-1.0/Outfall, Keedysville, Md.		.047		
Antietam Creek	180.2-4.4/Gaging Station near Sharpsburg			50	88

North Branch to Potomac to Monocacy River

WATER-QUALITY STATIONS, WATERWITHDRAWN, WASTES DISCHARGED, AND STREAM FLOWS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway)	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway)	Water intake	Waste discharge	Daily Stream flow, cfs.	
1 2 3 4 5 6	1 - 2 - 3 - 4 - 5 - 6	mgd	mgd	Minimum	Lower 5 Percentile
Antietam Creek	180.2-___/Outfall, Sharpsburg		x		
Potomac River	171.7/Intake & Outfall, Potomac Edison Electric Light Co.	72.421	72.421		
Shenandoah River	171.5-5.0/Gaging Station at Milville W. Va.			194	492
Potomac River	171.5/Outfall, Harpers Ferry, W. Va.		x		
Potomac River	165.5/Intake, B & O R.R., Brunswick, Md.	x			
Potomac River	165.3/Outfall, B & O R.R., Brunswick, Md.		x		
Potomac River	165.2/Outfall, Brunswick, Md.		.250		
Potomac River					
Catoctin Creek(Md)	162.4-24.7/Outfall, Myersville, Md.		.025		
Catoctin Creek	162.4-15.4/Outfall, Middletown, Md.		.060		
Catoctin Creek	162.4-14.8/Gaging Station near Middletown, Md.			1.4	3.1
Broad Run	162.4-5.8-___/Intake, Myersville				
Potomac River	159.5/Gaging Station at Point of Rochs, Md.			540	1220
Potomac River	159.4/Sampling Station - D.C. Dept. of Public Health			x	x

x Data Not available

ADDENDUM APPENDIX B

North Branch, Potomac to Monocacy River SUB-BASIN

WATER-QUALITY STATIONS, WATER WITHDRAWN, WASTES DISCHARGED, AND STREAM FLOWS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 -2 -3 - 4 - 5 - 6	Water intake mgd	Waste discharge mgd	Daily Stream flow, cfs Minimum	Lower percentile
Page 1					
POTOMAC RIVER	276.8/Outfall, Paw Paw, W. Va.		.050		
Page 3					
Delete following entry:					
Conococheague Creek	210.7-___/Outfall, Williamsport, Md.		.030		
Add following entry:					
POTOMAC RIVER	210.3/Outfall, Williamsport, Md.		.030		

Appendix B

POTOMAC RIVER — DRAINAGE BASIN

Monocacy River — SUB-BASIN

WATER-QUALITY STATIONS, WATER WITHDRAWN, WASTES DISCHARGED, AND STREAM FLOWS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 -2 - 3 - 4 - 5 - 6	Water intake mgd	Waste discharge mgd	Daily Stream flow, cfs Minimum	Lower 5 Percentile
POTOMAC RIVER	153.5-___/Intake, Mt. Alto, Pa.	0.063			
Monocacy River					
Rock Creek	153.5-52.5-___/Outfall, Gettysburg, Pa.		0.750		
Marsh Creek	153.5-52.5-___/Intake, Gettysburg, Pa.	0.560			
Fox Creek	153.5-___-___/Outfall, Littlestown, Pa.		0.160		
Maple Spring Run	153.5-___-___/Intake, Fairfield, Pa.	0.010			
Monocacy River	153.5-47.9/Gaging Station, Bridgeport, Md.			0.2	3.1
Piney Creek	153.5-45.3-8.9/Gaging Station, Taneytown, Pa.		.010	x	x
Piney Creek	153.5-45.3-8.85/Outfall, A.W. Feeser & Co.		.010(cooling)	x	x
Piney Creek	153.5-45.3-8.85/Outfall, Cambridge Rubber Co.		0.022(cooling)		
Piney Creek	153.5-45.3-8.4/Outfall, Taneytown Sewage Treatment Plant		0.150		
Toms Creek					
Miney Branch	153.5-43.9-___-__/Outfall, Camp Ritchey Project, Pa.		0.220		
Miney Branch	153.5-43.9-___-__/Intake & Outfall, Funkhouser Co., Pa.	0.010	0.010 (Lagoons) (Ind.)		
Friends Creek					
North Fork	153.5-43.9-10.0-4.4-1.7/Outfall, Victor Cullen Hospital		0.035		

WATER-QUALITY STATIONS, WATER WITHDRAWN, WASTES DISCHARGED, AND STREAM FLOWS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 -2 - 3 - 4 - 5 - 6	Water intake mgd	Waste discharge mgd	Daily Stream flow, cfs Minimum	Lower 5 Percentile
Turkey Branch	153.5-43.9-8.1-___/Intake, Emmitsburg, Md.	0.350[a]			
Toms Creek	153.5-43.9-6.7/Outfall, St. Joseph's College			.070	
Unnamed Tributary	153.5-43.9-6.7-___/Outfall, Mt. St. Mary's College			0.050	
Flat Run	153.5-43.9-4.8-1.3/Outfall, Emmitsburg, Md.		0.250		
Monocacy River	153.5-43.0/Outfall, Mr. Pleasant Can Co.,Westminster, Md.*		0.030 (Ind.)		
Double Pipe Creek					
Big Pipe Creek	153.5-38.3-1.8-27.1/Gaging Station, Bachman Mills, Md.			x	x
Big Pipe Creek	153.5-38.3-1.8015.6/Gaging Station, Pipe Creek, Md.			x	x
Bear Branch	153.5-38.3-1.8-11.3-___/Outfall C.K. Little Canning Co.		x		
Meadow Branch Unnamed Tributary	153.5-38.3-1.8-10.8-5.7-0.6/Outfall,Willow Farms Dairy		o.o40		
Meadow Branch	153.5-38.3-1.8-10.8-2.1/Gaging Station, Uniontown, Md.			x	x
Big Pipe Creek	153.5-38.3-1.8-3.9/Outfall, A.W. Feeser and Co.		0.060 (Ind.)		
Big Pipe Creek	153.5-38.3-1.8-3.5/Gaging Station, Bruceville, Md.			7.4	17.0
Little Pipe Creek	135.5-38.3-1.8-23.8/Outfall, Westminster S.T.P.		0.750		

POTOMAC RIVER — DRAINAGE BASIN
Monocacy River — SUB-BASIN

WATER-QUALITY STATIONS, WATER WITHDRAWN, WASTES DISCHARGED, AND STREAM FLOWS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 - 2 - 3 - 4 - 5 - 6	Water intake mgd	Waste discharge mgd	Daily Stream flow, cfs Minimum	Lower 5 Percentile
Little Pipe Creek	135.5-38.3-1.8-20.3/Gaging Station, Avondale, Md.			3.0	3.8
Turkeyfoot Run Unnamed Trib.	153.5-38.3-1.8-17.7-1.0-0.9/ Outfall, Teeters Quarry		x		
Little Pipe Creek	153.3-38.3-1.8-15.0/Outfall, New Windsor Farmers' Co-op*		0.015 (Ind.)		
Dickenson Run	153.5-38.3-1.8-14.5-___/Outfall, New Windsor, Md.*		0.055		
Wolf Pit Br nch	153.5-38.3-1.8-11.5-0.1/Gaging Station, Linwood, Md.			x	x
Little Pipe Creek	153.5-38.3-1.8-9.3/Outfall, Union Bridge, Md.		0.065		
Little Pipe Creek	153.5-38.3-1.8-9.2/Gaging Station, Union Bridge, Md.			x	x
Owens Creek	153.5-34.6-14.7/Intake, Victor Cullen State Hospital	x			
Owens Creek	153.5-34.6-14.2/Gaging Station, Lanz, Md.			3.0	0.5
Owens Creek	153.5-34.6-___/Outfall, Foxville, Md.		0.005		
Hunting Creek	153.5-31.6-___/Intake, Recreation Camp near Foxville, Md.	x			
Hunting Creek	153.5-31.6-8.0/Outfall, Howard Late Co.		0.018		
High Run	153.5-31.6-___-___/Intake, Thurmont	0.225			
Hunting Creek	153.5-31.6-6.9/Outfall, Thurmont, Md.		0.055		

POTOMAC RIVER — DRAINAGE BASIN
Monocacy River — SUB-BASIN

WATER-QUALITY STATIONS, WATER WITHDRAWN, WASTES DISCHARGED, AND STREAM FLOWS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 - 2 - 3 - 4 - 5 - 6	Water intake mgd	Waste discharge mgd	Daily Stream Flow cfs Minimum	Lower 5 Percentile
Hunting Creek	153.5-31.6-5.2/Gaging Station, Jimtown, Md			1.2	2.1
Little Hunting Creek	153.5-31.6-2.7-12.7/Outfall, J. Austin Fraley		0.009 (Ind.)		
Little Hunting Creek	153.5-31.6-2.7-12.5/Outfall, Fraley Rendering Co.				
Fishing Creek	153.5-27.3-9.9/Gaging Station, Lewistown, Md.			0.8	1.4
Fishing Creek	153.5-27.3-___/Intake, Frederick, Md.	0.600[b]			
Monocacy River	153.5-23.0/Outfall, Walkersville, Md.*		0.85		
Monocacy River	153.5-22.4/Gaging Station, near Frederick, Md.			x	69.0
Israel Creek	153.5-22.2-1.7/Intake, Mill Race near Ceresville, Md	x			
Monocacy River	153.5-22.0/Outfall, Woodsboro, Md.*		0.048		
Monocacy River	153.5-20.4/Intake, Camp Detrick	0.062			
Monocacy River	153.5-20.4/Intake, Frederick, Md.	0.800			
Detrick Creek	153.5-20.1-___/Outfall, Ideal Farms Dairy		0.004		
Monocacy River	153.5-19.7/Outfall, Ft. Detrick		0.650		
Carroll Creek	153.5-18.8-1.9/Outfall, Eveready Co.		0.094		
Carroll Creek	153.5-18.8-1.8/Intake, Corning Fibre Box Co.	x			
Carroll Creek	153.5-18.8-0.7/Outfall, Supreme Concrete Co.		x		
Monocacy River	153.5-18.7/Outfall, Frederick STP		3.800		

POTOMAC RIVER — DRAINAGE BASIN
Monocacy River — SUB-BASIN

WATER-QUALITY STATIONS, WATER WITHDRAWN, WASTES DISCHARGED, AND STREAM FLOWS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 - 2 - 3 - 4 - 5 - 6	Water intake mgd	Waste discharge mgd	Daily Stream Flow cfs Minimum	Lower 5 Percentile
Linganore Creek					
North Fork					
Talbot Branch	153.5-16.3-14.5-2.0-___/ Outfall, George W. Magin Co.		0.020		
Unnamed Trib.	153.5-16.3-14.5-0.9-___/ Outfall, Md. Milk Producers Assoc. Dairy		0.002		
Linganore Creek	153.5-16.3-2.25/Gaging Station near Frederick, Md.			6.0	15.0
Linganore Creek	153.5-16.3-1.1/Intake, Frederick Infiltration Plant	1.100			
Monocacy River	153.5-15.8/Gaging Station at Jug Bridge			39.0	96.0
Monocacy River	153.5-10.4/Intake, Alpha Portland Cement Co.	x			
Bennett Creek	153.5-5.9-2.1/Gaging Station Park Mills, Md.			5.2	10.0
Bennett Creek	153.5-5.9-1.8/Intake, Fish Hatchery at Lily Ponds	x			
Monocacy River	153.5-2.0/Sampling Station, D.C. Department of Health			x	x

x Data not available.
* Approximate mile point
a Includes supply from 3 wells and spring; 1963 Corps of Engineers Report indicates 2.0 mgd from Turkey Branch.
b Also includes auxiliary intake from Tuscarora Creek.

July, 1966

APPENDIX B

POTOMAC RIVER DRAINAGE BASIN

Monocacy River to Mattawoman Creek Sub-basin

WATER-QUALITY STATIONS, WATER WITHDRAWN, WASTES DISCHARGED, AND STREAM FLOWS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway)	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway)	Water intake	Waste discharge	Daily Stream Flow cfs	
1 2 3 4 5 6	1 - 2 - 3 - 4 - 5 - 6	mgd	mgd	Minimum	Lower 5 Percentile
POTOMAC RIVER	152.4/Intake, Potomac Edison Co., Dickinson, Md.	355.0			
POTOMAC RIVER	152.1/Outfall, Potomac Edison Co., Dickinson		355.0		
Goose Creek	142.1-___/Outfall, Middleburg, Va.		0.075		
Goose Creek	142.1-___/Outfall, Foxcroft School, Va.		0.005		
Goose Creek	142.1-10.9/Gaging Station, Oatlands, Va.			x	x
Goose Creek	142.1-2.4/Outfall, Goose Creek Country Club		0.008		
Tuscarora Creek	142.1-2.3-___/Outfall, Leesburg, Va.		0.250		
Sugarland Run	135.3-___/Outfall, Herndon, Va.		0.155		
Seneca Creek	133.9-___/Outfall, Weinschel Engineering Co.		0.001		
Seneca Creek	133.9-___/Outfall, Hadley Farms Dairy, Laytonsville, Md.		0.015(Ind.) 0.010(Cooling)		
Great Seneca Creek	133.9-5.9-___/Gaging Station near Gaithersburg, Md.			1.3	5.7
Great Seneca Creek	133.9-5.9-___/Gaging Station, Old Germantown, Md.			x	x
Seneca Creek	133.9-5.8/Gaging Station, Dawsonville, Md.			2.9	18.0
Watts Branch	129.2-9.4/Gaging Station at Rockville, Md			x	x
POTOMAC RIVER	127.0/Intake, Washington Suburban Sanitary Commission	5.500			
POTOMAC RIVER	126.5/Intake, Washington, D.C.	167.000			

APPENDIX B

POTOMAC RIVER DRAINAGE BASIN

Monocacy River to Mattawoman Creek Sub-basin

WATER-QUALITY STATIONS, WATER WITHDRAWN, WASTES DISCHARGED, AND STREAM FLOWS

MAIN WATERWAYS AND TRIBUTARIES' (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 - 2 - 3 - 4 - 5 - 6	Water intake mgd	Waste discharge mgd	Daily Stream Flow cfs Minimum	Daily Stream Flow cfs Lower 5 Percentile
POTOMAC RIVER	126.3/Sampling Station, Washington Aqueduct			x	x
POTOMAC RIVER	126.3/Gaging Station, Great Fall, Md.			x	x
Difficult Run	124.1-13.8/Gaging Station, Fairfax, Va.			x	x
POTOMAC RIVER	121.7/Outfall, U.S. Navy, Carderock, Md.		0.130		
Cabin John Creek	119.0-___/Intake, Rockville, Md.	2.200			
POTOMAC RIVER	118.4/Gaging Station near Washington, D.C.			448.0	1220.0
Little Falls Branch	116.3-___/Outfall, Maloney Concrete Co.		0.010		
Little Falls Branch	116.3-___/Outfall, Washington Petroleum Co.		x		
Little Falls Branch	116.3-___/Gaging Station near Bethesda, Md.			x	x
POTOMAC RIVER	116.3/Intake, Washington, D.C.	2.200			
POTOMAC RIVER	115.9/Gaging Station, Chain Bridge, D.C.			x	x
Pimmit Run	115.8-7.6/Outfall, Pimmit Hills		x		
Pimmit Run	115.8-7.1/Outfall, Pimmit Hills		x		

POTOMAC RIVER — DRAINAGE BASIN

Monocacy River to Mattawoman Creek — SUB-BASIN

WATER-QUALITY STATIONS*, WATER WITHDRAWN, WASTES DISCHARGED, AND STREAM FLOWS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 - 2 - 3 - 4 - 5 - 6	Water intake mgd	Waste discharge mgd	Daily Stream Flow, cfs Minimum	Daily Stream Flow, cfs Lower 5 Percentile
POTOMAC RIVER	115.0/Intake and Outfall, Potomac Electric Power Co., Buzzard Pt. Plant	450.000	X		
POTOMAC RIVER	112.3/Gaging Station, Georgetown University, D. C.			X	X
Rock Creek	111.9-8.0/Gaging Station, Sherrill Drive, D. C.			X	X
POTOMAC RIVER	109.5/Gaging Station near D. C. National Airport			X	X
Anacostia River					
Northeast Branch					
Indian Creek					
Beaverdam Creek	107.8-8.6- 3.6-3.6-0.3/Outfall, National Agriculture Research Center		0.500		
Indian Creek	107.8-8.6- 3.6-3.0/Outfall, Greenbelt, Md.		0.800		
Indian Creek	107.8-8.6- 3.6-___/Outfalls (2) Mineral Pigment Corp.		0.020		
Indian Creek	107.8-8.6- 3.6-___/Outfalls (3) A. H. Smith Sand and Gravel Company		4.050		
Indian Creek	107.8-8.6- 3.6-___/Outfall, Contee Sand and Gravel Company		0.800		
Paint Branch	107.8-8.6- 3.6-7.5/Outfall, U. S. Naval Reservation Ordinance Laboratory		X		
Paint Branch	107.8-8.6- 3.6-___/Intake, McCeney Sand and Gravel Company	0.480			
Paint Branch	107.8-8.6- 3.6-___/Outfall, McCeney Sand and Gravel Co. - White Oak		0.800		
Little Paint Br.	107.8-8.6- 3.6-2.9-1.5/Outfall, Prince Georges Sand and Gravel Company		0.500		
Northeast Branch	107.8-8.6-1.75/Gaging Station, Riverdale, Maryland			5.6	12.0
Northwest Branch	107.8-8.6-12.3/Gaging Station, Hyattsville, Md.			0.9	3.6

POTOMAC RIVER DRAINAGE BASIN

Monocacy River to Mattawoman Creek SUB-BASIN

WATER-QUALITY STATIONS*, WATER WITHDRAWN, WASTES DISCHARGED, AND STREAM FLOWS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 - 2 - 3 - 4 - 5 - 6	Water intake mgd	Waste discharge mgd	Daily Stream Flow, cfs Minimum	Daily Stream Flow, cfs Lower 5 Percentile
Northwest Branch	107.8-8.6-1.5/Gaging Station, Colesville, Md.			0.4	3.3
Northwest Branch	107.8-8.6-___/Gaging Station, Bladensburg, Md.			X	X
Northwest Branch	107.8-8.6-___/Outfall, McCeney Sand and Gravel Company		X		
Northwest Branch	107.8-8.6-___/Outfall, White Oak Naval Ordinance Laboratory		X		
Northwest Branch	107.8-8.6-___/Intake, Washington Suburban Sanitary District	5.5			
Beaverdam Creek	107.8-6.5-___/Gaging Station, Kenilworth Ave., D. C.			X	X
Anacostia River	107.8-___/Outfall, Beltsville Agriculture Research Station		X		
Anacostia River	107.8-___/Intake, Metroelectro Co.	X			
Anacostia River	107.8-___/Outfall, Plant Industry Station		X		
Anacostia River	107.8-___/Outfall, Howard Concrete Co.		X		
Anacostia River	107.8-1.0/Outfall, Smoot Sand & Gravel Co.		0.240		
Anacostia River	107.8-1.0/Outfall, Washington Gas & Light Company		X		
Anacostia River	107.8-___/Intake and Outfall, Potomac Edison Power Co., Bening Station	180.000	X		
Fourmile Run	106.4-2.0/Gaging Station at Alexandria, Virginia			X	X
POTOMAC RIVER	106.0/Outfalls (2) Smoot Sand and Gravel Company		0.270		
POTOMAC RIVER	106.0/Outfall, Corson and Gruman		0.024		
POTOMAC RIVER	106.0/Outfall, Howard Concrete Co.		0.012		
POTOMAC RIVER	106.0/Outfall, Super Concrete Co.		X		
POTOMAC RIVER	106.0/Outfall, Arlington Asphalt Co.		X		
POTOMAC RIVER	105.4/Outfall, Naval Research Lab.		X		

POTOMAC RIVER DRAINAGE BASIN

Monocacy River to Mattawoman Creek SUB-BASIN

WATER-QUALITY STATIONS*, WATER WITHDRAWN, WASTES DISCHARGED, AND STREAM FLOWS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 - 2 - 3 - 4 - 5 - 6	Water intake mgd	Waste discharge mgd	Daily Stream Flow, cfs Minimum	Daily Stream Flow, cfs Lower 5 Percentile
Northwest Branch	107.8-8.6-1.5/Gaging Station, Colesville, Md.			0.4	3.3
Northwest Branch	107.8-8.6-___/Gaging Station, Bladensburg, Md.			X	X
Northwest Branch	107.8-8.6-___/Outfall, McCeney Sand and Gravel Company		X		
Northwest Branch	107.8-8.6-___/Outfall, White Oak Naval Ordinance Laboratory		X		
Northwest Branch	107.8-8.6-___/Intake, Washington Suburban Sanitary District	5.5			
Beaverdam Creek	107.8-6.5-___/Gaging Station, Kenilworth Ave., D. C.			X	X
Anacostia River	107.8-___/Outfall, Beltsville Agriculture Research Station		X		
Anacostia River	107.8-___/Intake, Metroelectro Co.	X			
Anacostia River	107.8-___/Outfall, Plant Industry Station		X		
Anacostia River	107.8-___/Outfall, Howard Concrete Co.		X		
Anacostia River	107.8-1.0/Outfall, Smoot Sand & Gravel Co.		0.240		
Anacostia River	107.8-1.0/Outfall, Washington Gas & Light Company		X		
Anacostia River	107.8-___/Intake and Outfall, Potomac Edison Power Co., Bening Station	180.000	X		
Fourmile Run	106.4-2.0/Gaging Station at Alexandria, Virginia			X	X
POTOMAC RIVER	106.0/Outfalls (2) Smoot Sand and Gravel Company		0.270		
POTOMAC RIVER	106.0/Outfall, Corson and Gruman		0.024		
POTOMAC RIVER	106.0/Outfall, Howard Concrete Co.		0.012		
POTOMAC RIVER	106.0/Outfall, Super Concrete Co.		X		
POTOMAC RIVER	106.0/Outfall, Arlington Asphalt Co.		X		
POTOMAC RIVER	105.4/Outfall, Naval Research Lab.		X		

POTOMAC RIVER DRAINAGE BASIN

Monocacy River to Mattawoman Creek SUB-BASIN

WATER-QUALITY STATIONS*, WATER WITHDRAWN, WASTES DISCHARGED, AND STREAM FLOWS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 - 2 - 3 - 4 - 5 - 6	Water intake mgd	Waste discharge mgd	Daily Stream Flow, cfs Minimum	Daily Stream Flow, cfs Lower 5 Percentile
POTOMAC RIVER	105.4/Outfall, Blue Plains S.T.P.		176.000		
Oxon Run	104.6-0.5/Outfall, Washington Sand and Gravel Company		0.600		
POTOMAC RIVER	103.9/Gaging Station, Alexandria, Va.			X	X
POTOMAC RIVER	103.9/Intake and Outfall, Virginia Public Service Company	7.500	X		
POTOMAC RIVER	103.9/Intake and Outfall, Braddock Light and Power Company	193.000	X		
Hunting Creek	103.2- 1.6/Outfall, Huntington, Va.		X		
Cameron Run	103.2- 1.4-3.4/Gaging Station, Alexandria			X	X
Unnamed Tributary	101.2- 1.1/Outfall, New Alexandria, Va.		X		
Broad Creek					
Henson Creek	100.4- 3.2-6.1/Outfall, District Sand & Gravel Company		0.750		
Henson Creek	100.4- 3.2-6.1/Outfall, Silver Hill Sand and Gravel Company		X		
Henson Creek	100.4- 3.2-6.1/Outfall, Buffalo Sand & Gravel Company		0.800		
Henson Creek	100.4- 3.2-1.4/Gaging Station, Oxon Hill, Md.			X	2.9
Swan Creek	98.3- 0.3/Intake, Pumping Station near Fort Washington National Park	X			
Piscataway Creek	97.2-____/Outfall, Andrews Air Force Base		X		
Unnamed Tributary	97.2-11.9-1.9/Outfall, Boys Village, Md.		X		
Piscataway Creek	97.2- 3.7/Outfall, Ft. Washington Forest		X		
Waterloo Run	97.2-____-____/Outfall, Davis Sand and Gravel Company		X		
Piscataway Creek	97.2-____/Outfall, A. H. Smith and Co.		X		
Piscataway Creek	97.2-____/Outfall, Davis Sand and Gravel Company		X		

POTOMAC RIVER — DRAINAGE BASIN

Monocacy River to Mattawoman Creek — SUB-BASIN

WATER-QUALITY STATIONS*, WATER WITHDRAWN, WASTES DISCHARGED, AND STREAM FLOWS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 - 2 - 3 - 4 - 5 - 6	Water intake mgd	Waste discharge mgd	Daily Stream Flow, cfs Minimum	Daily Stream Flow, cfs Lower 5 Percentile
Piscataway Creek	97.2-__/Outfall, Fort Washington Estates		X		
Little Hunting Creek	95.8-1.2/Outfall, near Wellington, Va.		X		
Pomonkey Creek	89.0-__/Outfall, North Indian Head Estates		0.013		
Occoquan Bay					
Occoquan Creek	83.3-4.0-__/Gaging Station near Occoquan, Va.			X	X
Occoquan Creek	83.3-4.0-__/Intake, Alexandria, Va.	17.900			
Neabsco Creek	82.4-2.9/Outfall, Garfield, Va.		X		
POTOMAC RIVER	____/Outfall, Potomac Heights		0.120		

X Data not available.

* Sampling stations operated by the District of Columbia Departments of Public Health and Sanitary Engineering are listed in Appendix A.

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Appendix B

POTOMAC RIVER DRAINAGE BASIN

Mattawoman Creek to Mouth SUB-BASIN

WATER-QUALITY STATIONS, WATER WITHDRAWN, WASTES DISCHARGED, AND STREAM FLOWS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 - 2 - 3 - 4 - 5 - 6	Water intake mgd	Waste discharge mgd	Daily Stream Flow, cfs Minimum	Daily Stream Flow, cfs Lower 5 Percentile
POTOMAC RIVER					
Mattawoman Creek	81.6-12.6/Gaging Station near Pomonkey, Md.			X	X
Mattawoman Creek	81.6- 6.5/Outfall, Indian Head U.S.N. Powder Factory		X		
Mattawoman Creek	81.6- 6.5/Outfall, Indian Head, Md.		0.096		
POTOMAC RIVER	____/Intake and Outfall, Indian Head Power Plant	12.960	X		
Quantico Creek	78.2- 3.0/Outfall, near Dumfries, Va.		X		
Quantico Creek	78.2- 2.6/Outfall, Melrose Gardens, Va.		X		
Port Tobacco River	53.5-____/Outfall, La Plata, Md.		0.110		
Port Tobacco River	53.5-____/Outfall, A.D. Gamble & Son, La Plata		0.400		
Wicomico River					
Newport Run					
Gilbert Creek	35.1-12.0-2.3-____/Outfall, Southern Maryland Correction Camp		0.011		
Chaptico Bay					
Chaptico Creek	35.1- 7.0-3.9-0.8/Gaging Station at Chaptico, Md.			X	0.4
Breton Bay					
Town Run	27.2-____-____/Outfall, Leonardtown, Md.		0.430		
Town Run	27.2-____-____/Outfall, Leonardtown Sand and Gravel Company		0.400		
Unnamed Tributary	27.2-____-____/Outfall, Leonardtown Sand and Gravel Company		X		
Brooks Run	27.2-____-____/Outfall, Dean and Beavers, Hollywood, Maryland		0.300		
POTOMAC RIVER	17.9/Outfall, Marina and Homes, Piney Point		X		

WATER-QUALITY STATIONS, WATER WITHDRAWN, WASTES DISCHARGED, AND STREAM FLOWS

MAIN WATERWAYS AND TRIBUTARIES (Magnitude of Waterway) 1 2 3 4 5 6	LOCATION: RIVER MILE/DESCRIPTION (Magnitude of Waterway) 1 - 2 - 3 - 4 - 5 - 6	Water intake mgd	Waste discharge mgd	Daily Stream Flow, cfs Minimum	Daily Stream Flow, cfs Lower 5 Percentile
Piney Point Creek	17.9-___/Outfall, L. P. Steuart & Bro., Ind.		X		
Piney Point Creek	17.9-___/Hotel, Piney Point				
Yecomico River					
Kinsale Branch	12.7-1.8-___/Outfall, Kinsale Canning Co., Va.		X		
Yecomico River	12.7-___/Outfall, W. S. Courtney & Son, Munday Point		X		
St. Marys River	12.0-___/Gaging Station at Great Mills, Md.			1.3	3.0
St. Marys River	12.0-___/Outfall, St. Mary's City		0.008		
Coan River	8.0-___/Outfall, J. A. Lewis, Avalon, Va.		X		

X Data not available.

October, 1964

APPENDIX C

RESERVOIRS, LAKES AND PONDS

See Description of Appendices (Appendix C) in the General Reference Section for a narrative discussion of this material.

APPENDIX C

RESERVOIRS, LAKES AND PONDS IN
POTOMAC RIVER DRAINAGE BASIN, MARYLAND

Stream	Reservoir, Lake or Pond	Water Surface Area, Acres	Location of Dam	
			County	Maryland Coordinates
Potomac River				
North Branch				
Savage River				
Popular Lick Run	New Germany Lake	10.0	Garrett	0200-657
Savage River	Savage River Res. #1	350.0	Garrett	0200-612
Georges Creek				
Unnamed Branch	Dan's Mountain Pond	1.0	Allegany	0245-642
North Branch				
Unnamed Tributary	Poorhouse Pond	1.0	Allegany	0338-625
Evitts Creek	Evitts Creek Pond	4.0	Allegany	0311-657
Unnamed Tributary	Battie Mixon Fishing Hole	33.0	Allegany	---
Fifteen Mile Creek				
White Sulphur Run	White Sulphur Pond	2.0	Allegany	385-665
Potomac River	Little Pool	31.0	Washington	488-676
Potomac River	Big Pool	88.0	Washington	515-650
Licking Creek				
Lanes Run				
Indian Springs Run	Indian Springs Pond	1.0	Washington	---
Antietam Creek				
Falls Creek	Cascade Lake	19.0	Washington	660-684
Antietam Creek	Sharpsburg Pond	1.0	Washington	589-593
Israel Creek	Brownsville Pond	1.0	Washington	613-564
Potomac River	Brunswick Pond	1.0	Frederick	---
Monocacy River				
Hunting Creek	Frank Bentz Memorial Pond	2.0	Frederick	674-658
Carroll Creek	Gambrills Pond	0.8	Frederick	---
Carroll Creek	Culler Lake	5.0	Frederick	680-578
Linganore Creek	Libertytown Pond	1.0	Frederick	730-600
Bennett Creek	Kings Pond	1.0	Montgomery	---
Seneca Creek	Montgomery Pond	1.0	Montgomery	---
Anacostia River				
Northeast Creek				
Indian Creek	Smiths Gravel Pit	25.0	Pr. Georges	832-447
Beaverdam Creek				
Unnamed Trib.	Greenbelt Lake	22.0	Pr. Georges	832-427
Piscataway Creek	Boy's Village Pond	1.0	Pr. Georges	846-328
Mattawoman Creek	Springlake Pond	2.5	Charles	839-303
Mattawoman Creek	Cedarville Lake	5.0	Charles	845-300

* Source: 1961 Maryland Impoundments Inventory, Department of Game and Inland Fish. Impoundments included in the inventory are used for recreation.

POTOMAC RIVER BASIN (Cont'd)

Stream	Reservoir, Lake or Pond	Water Surface Area, Acres	Location of Dam	
			County	Maryland Coordinates
Mattawoman Creek	Munroe Lake	25.0	Charles	826-297
Mattawoman Creek	Mattawoman Rod and Gun Club #1	3.0	Charles	766-274
Mattawoman Creek	Mattawoman Rod and Gun Club #2	2.4	Charles	766-274
Mattawoman Creek	Mattawoman Rod and Gun Club #3	1.0	Charles	766-274
Mattawoman Creek	Mattawoman Rod and Gun Club #4	2.3	Charles	766-274
Mattawoman Creek	Stumpneck Pond	0.3	Charles	732-260
Wicomico River				
Allens Fresh Run				
Zahiah Swamp Run				
Kerrick Swamp Run				
Unnamed Trib.	La Plata Radio Station Lake	5.0	Charles	817-259
Gilbert Creek	Hughesville Pond	1.3	Charles	857-260
Hayden Run	Mechanicsville Pond	0.5	St. Marys	873-221
Breton Bay				
MacIntosh Run				
Brooks Run	Peake Lake	6.0	St. Marys	923-178
St. Mary's River				
Unnamed Tributary	California Lake	5.0	St. Marys	941-169

APPENDIX D

STORAGE REQUIREMENTS FOR SUSTAINED YIELDS

See Description of Appendices (Appendix D) in the General Reference Section for a narrative discussion of this material.

APPENDIX D

Storage Requirements for Sustained Yields

The following table lists the artificial requirements, computed as outlined in the Description of Appendices, General Reference Section, for streams in the Potomac River Basin.

The storage values are given in terms of mean annual flow, but can be converted easily into volumes by use of the relation:

$$\frac{V_s}{M} = R_s$$

in which

V_s = volume of storage required;

M = mean annual flow, in acre-feet; and

R_s = storage ratio (from table)

For example, the following table gives a storage ratio of 0.353 for a gross yield of 0.7 M on the Potomac River at Hancock, Maryland.

Mean flow = 3,993 cfs (from column 3)

$$M = 3{,}993 \text{ ft.}^3 \times \text{sec.}^{-1} \times \frac{1.98 \text{ acre-feet} \times \text{day}^{-1}}{\text{ft.}^3 \times \text{sec.}^{-1}} \times 365 \text{ days}$$

$$M = 3{,}993 \times 1.98 \times 365 \text{ acre-feet}$$

$$V_s = R_s M = 0.353 \times 3993 \times 1.98 \times 365 \text{ acre-feet}$$

$$V_s = 1{,}018{,}667 \text{ acre-feet}$$

This means that a reservoir holding 1,018,667 acre-feet of water on the Potomac River above the stream gage at Hancock would provide a gross yield of 2,795 cfs (equal to 3993 cfs times 0.7) for 19 out of every 20 years, on the average. Except for seepage, evaporation losses and diversions, this flow would be sustained at the gage.

Storage Requirements for Various Gross Yields*

POTOMAC RIVER DRAINAGE BASIN
North Branch of the Potomac River Sub-basin
(Recurrence Interval = 20 Years)

Stream and Gaging Station	Drainage area, sq. miles	Mean annual flow, cfs	Coeff. of Variation	Natural Storage Constant, days	Storage in terms of mean annual flow for various yields: Yield in Terms of Mean Annual Flow			
					0.3	0.5	0.7	0.9
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
North Branch Potomac River at Kitzmiller, Md.[a]	225	431	0.19	8.0	0.099	0.219	0.370	0.795
North Branch Potomac River at Bloomington[a]	287	498	0.24	22	0.084	0.200	0.368	0.946
Savage River near Barton[b]	49.1	75.0	0.18	8.0	0.112	0.219	0.365	0.760
Crabtree Creek near Swanton[c]	16.7	28.8	0.17	2.2	0.106	0.227	0.371	0.740
Savage River at Bloomington[d]	115	166	0.28	-- m	0.127	0.258	-- m	-- m
North Branch Potomac River at Luke[e]	404	684	0.17	23	0.080	0.199	0.331	0.689
Georges Creek at Franklin[f]	72.4	76.3	0.28	-- m	0.114	0.274	-- m	-- m
North Branch Potomac River at Pinto[g]	596	861	0.21	6.6	0.099	0.221	0.382	0.869
North Branch Potomac River at Pinto[h]	596	861	0.16	33	0.076	0.185	0.306	0.629
Wills Creek below Hyndman, Pa.[i]	146	185	0.15	-- m	0.129	0.256	-- m	-- m
Wills Creek near Cumberland, Md.[j]	247	312	0.24	-- m	0.107	0.235	-- m	-- m
North Branch Potomac River near Cumberland[k]	875	1,205	0.28	14	0.092	0.211	0.443	1.166
North Branch Potomac River near Cumberland[l]	875	1,205	0.14	8.0	0.083	0.219	0.345	0.620
Evitts Creek near Centerville, Pa.[i]	30.2	30.2	0.26	15	0.090	0.210	0.412	1.054

* Gross yield includes evaporation losses and seepage losses.

Footnotes Cont'd.

[a] Regulation at low flow by Stony River Reservoir.
[b] City of Frostburg, Maryland diverts about 0.5 cfs from headwaters of stream for municipal supply.
[c] Small diversion above station by Baltimore and Ohio Railroad.
[d] Diversion above station by Baltimore and Ohio Railroad and by cities of Frostburg, Piedmont, and Westernport for municipal supply.
[e] Flow regulated since 1913 by Stony River Reservoir, 45 miles above station and, since December, 1950, by Savage River Reservoir, 5 miles above station. Some regulation at low flow by West Virginia Pulp and Paper Company at site used 1899 - 1906. Low-flow frequency and durations tables for this station represent the flow pattern since December, 1950.
[f] Records include about half a cubic foot per second of sewage from city of Frostburg, which obtains its water supply from Big Piney Run (Monogahela River basin) and Savage River. A negligible discharge diverted above station by Frostburg Water Company for municipal supplies of Eckhart and Welch Hill. Records include drainage from numerous active and abandoned coal mines.
[g] Some regulation at low flow by Stony River Reservoir, 66 miles above station and since December, 1950, by Savage River Reservoir. Low-flow frequency and durations tables for this station represent the flow pattern prior to December, 1950.
[h] Some regulation at low flow by Stony River Reservoir, 66 miles above station and since December, 1950, by Savage River Reservoir. Low-flow frequency and durations tables for this station represent the flow pattern since December, 1950.
[i] Unregulated.
[j] Records include drainage from numerous active and abandoned coal mines. Slight diurnal fluctuation at low flow caused by quarry upstream.
[k] Regulation by Stony River Reservoir, about 79 miles above station and since December, 1950, by Savage River Reservoir. Prior to July, 1957, small amount of inflow from industrial wastes and sewage from City of Cumberland from water diverted from Evitts Creek, mouth of which is below station. Low-flow frequency and durations tables for this station represent the flow pattern prior to December, 1950.
[l] Regulation by Stony River Reservoir, about 79 miles above station and since December, 1950, by Savage River Reservoir. Prior to July, 1957, small amount of inflow from industrial wastes and sewage from City of Cumberland from water diverted from Evitts Creek, mouth of which is below station. Low-flow frequency and durations tables for this station represent the flow pattern since December, 1950.
[m] Values not available.

Storage Requirements for Various Gross Yields*

POTOMAC RIVER DRAINAGE BASIN
Main Stem Sub-basin, Above Monocacy River
(Recurrence Interval = 20 Years)

Stream and Gaging Station	Drainage area, sq. miles	Mean annual flow, cfs	Coeff. of Variation	Natural Storage Constant, days	Storage in terms of mean annual flow for various yields: Yield in Terms of Mean Annual Flow			
					0.3	0.5	0.7	0.9
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Town Creek near Oldtown, Md.[a]	148	123	0.41	-- i	0.124	-- i	-- i	-- i
Sawpit Run near Oldtown[a]	5.0	4.11	0.19	-- i	0.191	0.338	-- i	-- i
Potomac River at Paw Paw, W. Va.[b]	3,109	3,007	0.19	17	0.093	0.207	0.353	0.774
Little Tonoloway Creek, near Hancock, Md.[c]	16.9	15.8	0.33	-- i	0.143	0.270	-- i	-- i
Potomac River at Hancock[d]	4,073	3,993	0.25	14	0.093	0.211	0.398	1.011
Licking Creek near Sylvan, Pa.[a]	158	166	0.32	40	0.086	0.193	0.470	1.327
Conococheague Creek at Fairview, Md.[e]	494	570	0.29	58	0.059	0.155	0.372	1.111
Potomac River at Shepherdstown, W. Va.[d]	5,936	5,804	0.30	35	0.078	0.192	0.432	1.223
Antietam Creek near Sharpsburg, Md.[f]	281	258	0.30	122	0.001	0.073	0.264	1.009
Shenandoah River at Millville, W. Va.[g]	3,040	2,504	0.32	82	0.034	0.136	0.390	1.224
Little Catoctin Creek at Harmony, Md.[h]	8.9	10.1	0.32	-- i	0.093	-- i	-- i	-- i
Catoctin Creek near Middletown[a]	66.9	75.7	0.33	13	0.117	0.234	0.546	1.451
Potomac River at Point of Rocks[b]	9,651	9,288	0.27	41	0.061	0.174	0.376	1.044

* Gross yield includes evaporation losses and seepage losses.
[a] Unregulated
[b] Low flow affected by Stony River Reservoir and since December, 1950, by Savage River Reservoir.

Footnotes Cont'd.

c Occasional small diversions for irrigation of peach orchards above station.

d Slight regulation at low flow from powerplant upstream. Low flow affected slightly by Stony River Reservoir and since December, 1950, by Savage River Reservoir.

e Low flow partly regulated by small powerplants near Mercersburg, Pa.

f Flow slightly regulated by powerplant above station. Regulation greater prior to 1936. Since 1928, records include pumpage from Potomac River for municipal supply of Hagerstown. This water later enters Antietam Creek above station as sewage.

g Regulation by hydroelectric plants, particularly that of Potomac Edison Company, half a mile above station.

h Small diversion above station for municipal water supply of Middletown.

i Values not available.

Storage Requirements for Various Gross Yields*

POTOMAC RIVER DRAINAGE BASIN
Main Stem Sub-basin, Below Monocacy River
(Recurrence Interval = 20 Years)

Stream and Gaging Station	Drainage area, sq. miles	Mean annual flow, cfs	Coeff. of Variation	Natural Storage Constant, days	Storage in terms of mean annual flow for various yields: Yield in Terms of Mean Annual Flow			
					0.3	0.5	0.7	0.9
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Great Seneca Creek near Gaithersburg, Md.[a]	41.0	36.6	0.30	68	0.060	0.147	0.369	1.142
Seneca Creek at Dawsonville[b]	101	94.1	0.32	81	0.042	0.137	0.391	1.226
Potomac River near Washington, D. C.[c]	11,560	11,060	0.27	41	0.066	0.174	0.376	1.044
Little Falls Branch near Bethesda, Md.[a]	4.1	3.31	0.27	42	0.061	0.173	0.374	1.042
Rock Creek at Sherrill Drive, Washington, D. C.[a]	62.2	55.8	0.35	82	0.051	0.148	0.462	1.398
Northeast Branch Anacostia River at Riverdale, Md.[a]	72.8	78.6	0.28	53	0.050	0.158	0.368	1.070
Northwest Branch Anacostia River near Colesville[d]	21.3	22.0	0.36	83	0.054	0.159	0.488	1.452
Northwest Branch Anacostia River near Colesville[e]	21.3	22.0	0.27	139	0.008	0.040	0.186	0.797
Northwest Branch Anacostia River near Hyattsville[f]	49.4	38.5	0.32	49	0.069	0.181	0.453	1.305
Henson Creek at Oxon Hill[g]	16.7	19.9	0.32	38	0.085	0.196	0.475	1.332
Mattawoman Creek near Pomonkey[a]	57.7	57.9	0.34	-- i	0.190	-- i	-- i	-- i
Chaptico Creek at Chaptico[h]	10.7	10.8	0.38	99	0.084	0.161	0.513	1.524
St. Marys River at Great Mills[a]	24.0	23.8	0.36	109	0.045	0.123	0.437	1.387

* Gross yield includes evaporation losses and seepage losses.

Footnotes Cont'd.

a Unregulated.
b Small diversion for irrigation above station.
c Diversions at Great Falls through aqueducts, and since June, 1959, from gage pool at Little Falls Dam for municipal water supply of Washington, D. C. Low flow affected slightly by Stony River Reservoir and since December, 1950, by Savage River Reservoir.
d Inflow from Patuxent River to augment water supply for Washington Suburban Sanitary District began August 12, 1939. Low-flow frequency and durations tables for this station represent the flow pattern prior to August 12, 1939.
e Inflow from Patuxent River to augment water supply for Washington Suburban Sanitary District began August 12, 1939. Low-flow frequency and durations tables for this station represent the flow pattern since August 12, 1939.
f Low flow regulated by storage and diversion (to Morse filtration plant) at Burnt Mills Dam, 7 miles above station, and by inflow pumped from Patuxent River basin as required for water supply of Washington Suburban Sanitary District.
g Small diversion above station for irrigation of truck farms. Some regulation at low flow by sand and gravel plant above station.
h Occasional small diversions above station.
i Values not available.

APPENDIX E

SURFACE WATER PERMITS

See Description of Appendices (Appendix E) in the General Reference Section for a narrative discussion of this material.

APPENDIX E

POTOMAC RIVER DRAINAGE BASIN
SURFACE-WATER APPROPRIATION PERMITS

COUNTY AND FIRM NAME	STREAM MAGNITUDE OF WATERWAY 1/ 2/ 3/ 4/	APPROPRIATION (mgd) AVERAGE	MAXIMUM
ALLEGANY COUNTY			
	Potomac River		
Pittsburgh Plate Glass Co.	North Branch Potomac	1.820	4.150
West Virginia Pulp & Paper Co.	North Branch Potomac		90.000 (a)
Leroy Minke	Evitts Creek	0.010	
Potomac Edison Co.	North Branch Potomac	101.4	112.4
Conda O. Smith	Mill Run	0.008	0.010
Richard Stegmaier	Evitts Creek	.218	.435
Richard W. Fagan	Evitts Creek	.100	.290
Stegmaier Orchards	Evitts Creek	.216	.360
Pinto Utilities	Triple Lakes	.100	.200
Cumberland Cement & Supply Co.	Wills Creek	1.650	2.160
Manley Sand Division Martin Marietta	Wills Creek	5.040	7.200
Evitts Creek Land & Improvement Co.	Evitts Creek	.450	.650
	Wills Creek		
Cover Valley Golf Course	Braddock Run	.050	.100
WASHINGTON COUNTY			
Sharon Feather Co.	Antietam Creek	0.150	0.180
Washington Co. Sanitary District	Potomac River	.128	.230
FREDERICK COUNTY			
Alpha Portland Cement Co.	Monocacy River	.432	.760
Corning Fibre Box Corp.	Carroll Creek	0.150	0.220
CARROLL COUNTY			
Union Bridge Chamber of Commerce*	Little Pipe Creek	.0038	

* Appropriation varies with monthly needs
(a) 2.0 mgd may be taken from Savage River

APPENDIX E CONTINUED

COUNTY AND FIRM NAME	STREAM MAGNITUDE OF WATERWAY 1/ 2/ 3/ 4/	APPROPRIATION AVERAGE (mgd)	MAXIMUM
MONTGOMERY COUNTY			
International Monetary Fund	Unnamed stream	.050	.100
Potomac Electric Power Co.	Potomac River	.400	.500
Kettler Bros. Inc.	Cabin Branch	.0179	.150
Washington Suburban Sanitary Commission	Potomac River		119.0
PRINCE GEORGE'S COUNTY			
Metalectro Corp.	Anacostia River Bear Creek	0.200	0.300
CHARLES COUNTY			
Potomac Sand & Gravel Co.	Potomac River	5.200	6.400
Potomac Sand & Gravel Co.	Mattawoman Creek	3.000	3.800

APPENDIX F

GROUND WATER PERMITS

See Description of Appendices (Appendix F) in the General Reference Section for a narrative discussion of this material.

APPENDIX F
GROUND WATER APPROPRIATION PERMITS
BY COUNTY, PARTLY OR WHOLLY WITHIN THE
POTOMAC RIVER DRAINAGE BASIN
(appropriations of 10,000 gallons or more per day)

Permit Holder Name and Address (1)	Water Use (2)	Date of Issue (3)	Appropriation Average (4)	Permitted Maximum (5)
Allegany County*				
Borden Shaft Water Co. Borden Shaft, Md.	supply for town of Borden Shaft and Village of Carlos	December 28, 1960	30,000	36,000
Burton, Thomas W. 106 Sunset View LaVale, Maryland	general use for 125 unit trailer court	May 5, 1965	30,000	50,000
Mt. Savage Water Co. Mt. Savage, Maryland	supplement water system	April 14, 1964	15,000	20,000
Pinto Utilities RFD, Cumberland, Md.	housing development	November 1, 1961	50,000	60,000
Pinto Utilities Pinto, Maryland	housing development	August 22, 1962	80,000	89,000
Potomac Park Water Co., Inc., Potomac Park, Cumberland, Maryland	sanitary facilities for homes	March 10, 1966	30,000	50,000
The Time and Alleganian Company, Cumberland, Md.	air conditioning & cooling lead plates	January 14, 1959	50,000	96,000

* In addition to permits listed, there are 63 permits outstanding for appropriations in Allegany County under 10,000 gallons per day. These appropriations total 105,989 gallons per day.

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Permit Holder Name and Address (1)	Water Use (2)	Date of Issue (3)	Appropriation Permitted Average (4)	Maximum (5)
Carroll County*				
American Marietta Co. Box 71, Jessups, Md.	Drinking, sanitary facilities, batching of concrete	Sept. 22, 1959	30,000	60,000
Black & Decker Mfg. Co. Hanover Rd., Hampstead, Md.	Sanitary facilities for mfg. plant	June 8, 1966	20,000	30,000
Black & Decker Mfg. Co. Hanover Rd., Hampstead, Md.	Sanitary facilities for factory	Oct. 18, 1965	20,000	25,000
Black & Decker Mfg. Co. Towson, Md.	Operation of plant	July 17, 1951	21,600	28,800
Blue Ridge Rubber Co. Taneytown, Md.	Boiler, cooling, fire protection, sanitary uses	Feb. 2, 1948	24,000	624,000
Colbert, Killian Canning Co. Hood's Hill P.O. Woodline, Md.	Canning & processing vegetables	Aug. 9, 1949	30,000	50,000
Community Sewer & Water Service, Inc. 231 St. Paul Place, Balto. 2	Liberty Manor Development	Sept. 30, 1960	30,000	50,000
Congoleum Nairn, Inc. Cedarhurst, Md.	Industrial and sanitary purposes	Jan. 21, 1948	30,000	40,000
Dutterer, Stewart N. 114 Ma. Ave. Westminster	For greenhouses	May 7, 1959	15,000	25,000

* In addition to permits listed, there are 133 permits outstanding for appropriations in Carroll County under 10,000 gallons per day. Those appropriations total 16,276,000 gallons per day.

APPENDIX F

Permit Holder Name and Address (1)	Water Use (2)	Date of Issue (3)	Appropriation Permitted Average (4)	Maximum (5)
Carroll Co. (con't)				
Shields Trailer Sales, Inc. Rt. #1, Finksburg, Md.	Domestic use for trailers	Sept. 23, 1964	15,000	20,000
Shilling Bros. Finksburg, Md.	Preparation of vegetables for canning	Jan. 30, 1946	35,000	60,000
Thomas, Bennett & Hunter, Inc. 70 John St., Westminster	Mixing & processing of transit-mix concrete & flushing of empty mixers	Nov. 30, 1951	10,000	20,000
Union Bridge Chamber of Commerce Union Bridge, Md.	For Union Bridge Community Center	Aug. 22, 1960	21,000	24,000
Willow Farms Dairy Rt. #7, Westminster, Md.	Cooling milk & compressors	Feb. 18, 1949	90,000	150 gpm
Charles County*				
American Builders & Developers Corp. 1215 K St. N.E. Washington, D.C.	Domestic supply for 250 homes	Dec. 20, 1965	100,000	250,000
American Telephone & Telegraph Co. 400 Hamilton Ave. White Plains, N.Y.	Sanitary purposes and air-conditiong make-up	Apr. 9, 1963	15,000	22,000

* In addition to permits listed, there are 72 permits outstanding for appropriations in Charles County under 10,000 gallons per day. Those appropriations total 19,521,450 gallons per day.

APPENDIX F

Permit Holder Name and Address (1)	Water Use (2)	Date of Issue (3)	Appropriation Permitted Average (4)	Maximum (5)
Charles Co. (con't)				
Bowie, Howard N. Rt. 301, LaPlata, Md.	For development, "Parkway"	Apr. 2, 1964	10,000	12,000
Brookside Homes, Inc. 7429 Berkshire Rd., Balto,24	Housing development	July 15, 1955	12,500	15,000
Camp Saint Charles Rock Point, Md.	Swimming pool	Apr. 10, 1964	24,000 (4½ days)	
Carlita's E-Z Wash P.O. Box 1316, Bryans Rd, Md.	For laundromat	Sept. 29, 1961	14,400	16,800
Charles Co. Fair, Inc. LaPlata, Md.	Drinking, toilet facilities, livestock watering	Aug. 11, 1965	12,000	15,000
Charles Co. Sand & Gravel Co, Inc. P.O. Box 322, Waldorf, Md.	For concrete block plant	Mar. 26, 1964	30,000	35,000
Dept. of Public Improvements for Dept. of Correction Balto., Md.	Drinking, food preparation, toilet facilities	Nov. 24, 1965	12,500	15,000
Dr. Pepper Bottling Plant Waldorf, Md.	Commercial purposes	Jan. 30, 1948	24,000	30,000
Ely, J. Indian Head, Md.	Fire protection, sanitary & general use for a shopping center	Aug. 5, 1953	11,000	14,000

APPENDIX F

Permit Holder Name and Address (1)	Water Use (2)	Date of Issue (3)	Appropriation Permitted Average (4)	Maximum (5)
Charles Co. (con't)				
Ford, Dorsey F. Box 83-A, Indian Head, Md.	Housing Development	Nov. 22, 1960	28,800	3,000 (gph)
Free State Investigation Corp. Waldorf, Md.	Pool, air conditioning, restaurant, rest rooms	July 8, 1958	30,000 - 5 mos. 20,000 - 7 mos.	60,000
Gray, Phillip E., Inc. Lexington Park, Md.	Operation of a restaurant	Oct. 4, 1956	14,000	18,000
Gray, Phillip E. Lexington, Md.	For an Open Air Theater, restaurant and gas station	Mar. 7, 1958	12,000	15,000
Hintze, E.J. Waldorf, Md.	Operation of a Motel and trailer court.	Aug., 30, 1955	30,000	45,000
Idlewood Park, Inc. Rt. #1, Box 450, Waldorf, Md.	For trailer park	Feb. 19, 1963	17,500	30,000
Jarboe, Bernard D. Waldorf, Md.	Restaurant & Bar	Dec. 4, 1953	25,000	35,000
Jenkins, Eugene A. Indian Head, Md.	For a subdivision	Feb. 4, 1963	17,500	30,000
Jenkins Lane Water Co. Rt. #1, Box 150, Indian Head, Md.	Supplement the domestic water system	Apr., 14, 1965	14,000	27,000
The Jusuit Priests Loyola Retreat House Lopes Cr. Rd., Bel Alton	Loyola Retreat House	Apr. 30, 1957	16,500	33,000

APPENDIX F

Permit Holder Name and Address (1)	Water Use (2)	Date of Issue (3)	Appropriation Permitted Average (4)	Maximum (5)
Charles Co. (con't)				
Kathmar, Inc. U.S. #301, Faulkner, Md.	Operation of a motel & restaurant	Mar.. 27, 1953	15,000	80 gpm
Keech-Neave Development Co., Inc. Box 68, Waldorf, Md.	Domestic household use for 55 homes	Apr. 15, 1966	25,000	30,000
Lenbern Construction Co. 4002 Hilton Rd., Balto. 15	Additional supply for householders now using public supply	Apr. 20, 1956	15,000	20,000
Marshall Hall Park, Inc. Marshall Hall, Md.	Swimming pool, drinking fountains	June 22, 1960	10,000	20,000
Merrier Boys Camp, Inc. Bond Bldg., N.Y. Ave, N.W. Washington 5, D.C.	Boys' Summer camp	June 22, 1956	10,000	18,000
Meleen, Paul R. & Son U.S. #301, Faulkner, Md.	Motel & Restaurant	Mar. 27, 1953	15,000	80 gpm
Mudd, Margaret C. Rt. 2, LaPlata, Md.	Water Supply system of development of "Oakwood"	Apr. 20, 1964	10,000	1[illegible],000
Ritchler, Thomas E., Jr. 6328 N. 25[illegible] St., Arlington, Va.	Perry Wright homes project	Oct. 17, 1957	15,000	20,000
Mutual Builders, Inc. 1200 Prince St., Alexandria, Va.	Public water supply of residential community	Oct. 16, 1963	100,000	150,000
Never Never Land, Inc. Faulkner, Md.	Water supply of Never Never Land including snack bar, rest rooms, country home	Dec. 19, 1961	1[illegible],500	15,000

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Permit Holder Name and Address (1)	Water Use (2)	Date of Issue (3)	Appropriation Permitted Average (4)	Maximum (5)
Charles Co. (con't)				
Parkway Tourist Center LaPlata, Md.	Operation of a tourist camp	July 14, 1950	12,000	
Parkway Tourist Center LaPlata, Md.	Restaurant, gas station, motel	Mar. 2, 1959	13,500	15,000
Posey, Aubrey Box 165, RFD#1, Indian, Md.	Restaurant & bar	June 2, 1961	2,750	3,000
Potomac Fish and Oyster Co. Rock Point, Md.	Processing & packing seafood	Sept. 6, 1946	14,400	14,800
Potomac Heights Mutual Home Owners Assoc., Inc. Potomac Heights, Indian Head	Domestic water supply of Potomac Heights Housing development	Sept. 20, 1955	162,000	216,000
Schweigert, Walter H. & Marvin P. Cadur 923 Pennsylvania Bldg. Washington	Domestic use in approx. 80 individual dwellings	June 24, 1965	24,000	32,000
Smith, Raymond Pisgah, Md.	Water supply of Red Hill Estates	Aug. 1, 1960	15,000	36,000
Smitty's Trailer Court White Plains, Md.	For trailer court	Oct. 6, 1959	13,500	15,000
Stricker, John E. P.O. Box 415, LaPlata, Md.	Restaurant & amusement park	May 18, 1959	15,000	30,000
Tour Construction Co. U.S. #301, Faulkner, Md	Motel & restaurant	Mar. 27, 1953	15,000	80 gpm.

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Permit Holder Name and Address (1)	Water Use (2)	Date of Issue (3)	Appropriation Permitted Average (4)	Maximum (5)
Charles Co. (con't)				
Trimac Water Co. Waldorf, Md.	Supply for Forest Park Development	Mar. 19, 1959	11,250	13,500
Zihlman, Frederick A. 1 Green Meadows Ct. Indian Head, Md.	Supply for 15 country homes	Oct. 30, 1961	12,000	14,000
Frederick County*				
Alpha Portland Cement Co. Alpha Bldg., 15 S. 3rd. St. Easton, Pa.	Process, cooling & drinking	Nov. 19, 1957	250,000	286,000
Alpha Portland Cement Co. Easton, Pa. & Lime Kiln, Md.	Drinking & cooling water	Sept. 18, 1956	108,000	144,000
American Telephone & Telegraph Co. 400 Hamilton Ave., White Plains, New York	Sanitation & air-conditioning	Dec. 20, 1960	50,000	51,000
American Telephone & Telegraph Co. 400 Hamilton Ave. White Plains, N.Y.	Sanitation & air-conditioning	May 29, 1961	10,000	14,400

* In addition to permits listed, there are 125 permits outstanding for appropriations in Frederick County under 10,000 gallons per day. Those appropriations total 14,757,000 gallons per day.

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Permit Holder Name and Address (1)	Water Use (2)	Date of Issue (3)	Appropriation Permitted Average (4)	Maximum (5)
Frederick Co. (con't)				
American Telephone & Telegraph Co. 400 Hamilton Ave. White Plains, N.Y.	Sanitation & air-conditioning	May 29, 1961	14,4000	20,160
Braddock Water Co., Inc. 6 W. Second St. Frederick, Md.	Human consumption, laundry of clothes, swimming pools, (public water supply)	Nov. 28, 1962	28,000	65,000
Brosius Homes Corp. 4 West Church St. Frederick, Md.	"A water company for a residential development called White Rock"	Sept. 8, 1954	20,000	25,000
Cramer, Ammon Linden Hills, Frederick Co.	Supply for Barbara Fritchie candy establishment, B. Fritchie Gift Shop and restaurant and Price Elec. Co., Betsy Ross motel & trailer	Oct. 5, 1959	50,000	60,000
Cramer, Ammon L. P.O. Box 644 Frederick, Md.	Restaurant & candy manufacture	Oct. 9, 1959	35,000	40,000
Camp Airy Thurmont, Md.	Supply for camp & replenishing swimming pool	July 15, 1958	12,000	16,000
Camp Airy Thurmont, Md.	Supply of camp & replenishing swimming pool	Aug. 31, 1959	20,000	25,000

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Permit Holder Name and Address (1)	Water Use (2)	Date of Issue (3)	Appropriation Permitted Average (4)	Maximum (5)
Frederick Co. (con't)				
Colt & Dixon Packing & Manufacturing Co. 71 E. South St. Frederick, Md.	Canning corn & cooling the product	May 14, 1954	35,000	40,000
Corning Packaging Co. 4 Water St. Frederick, Md.	Process cooling of molds	Dec. 23, 1965	300,000	500,000
Free State Truck Stop Rt. 71, Thurmont, Md.	For a truck stop and restaurant	Oct. 4, 1963	12,000	15,000
Hunting Creek Fisheries P.O. Box 152, Thurmont, Md.	Storage of goldfish during low water periods	Nov. 2, 1960	20,000	72,000
Kefauver, Noah, Jr. Middletown, Md.	For a central water supply for 140 proposed homes	Mar. 15, 1966	60,000	70,000
Lake Spring Water Co. 100 W. Church St. Frederick, Md.	For a residential development	Aug. 19, 1955	20,000	25,000
Lehigh Portland Cement Co. 718 Hamilton St. Allentown, Pa.	Make-up water for process machinery cooling, washing & sanitary facilities at plant operation	Oct. 28, 1963	40,000	108,000

APPENDIX F

Permit Holder Name and Address (1)	Water Use (2)	Date of Issue (3)	Appropriation Permitted Average (4)	Maximum (5)
Frederick Co. (con't)				
Maryland State Roads Commission 300 W. Preston St. Baltimore, Md.	Sanitary facilities for two rest areas on the Interstate Highway System (I-70)	Mar. 11, 1966	10,000	15,000
Md. Synod of the Evangelical Lutheran Church Towson, Md.	Supply of the camp & conference center	Jan. 30, 1959	75,000	90,000
Romsburg, Roy C. 120 W. Patrick St. Frederick, Md.	Air-conditioning & cooling system	Dec. 23, 1948	30,000	100 gpm
Sanitary Products Corp. Taneytown, Md.	General industrial use	Nov. 16, 1951	210,000	450 gpm
Smith Bakeries, Inc. Taneytown, Md.	Manufacture of bakery products and operation of air-conditioning units	Sept. 20, 1955	40,000	64,000
Stephens, C. Y. Rt. #1, Laurel, Md.	Cooling dairy products	Apr. 20, 1961	15,000	20,000
Walser, Billy F. Pure Oil Co. 208 Beethoben, Lexington N.C.	Truck stop, motel & restaurant	Apr. 14, 1965	15,000	20,000

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Permit Holder Name and Address (1)	Water Use (2)	Date of Issue (3)	Appropriation Permitted Average (4)	Maximum (5)
Garrett County* City Water Co. Friendsville, Md.	Public water supply	Aug. 22, 1960	10,000	15,000
Garrett Co. Coop., Inc. Grantsville, Md.	General canning	May 26, 1947	15,000	75,000
Grantsville Dairy, Inc. Grantsville, Md.	Dairy use	Mar. 26, 1946	13,500	
Johnstown Coal & Coke Co. Vindex, Md.	Household use & supply locomotive boiler	Oct. 23, 1945	26,000	50,000
Sterling Processing Corp. Oakland, Md.	Processing of poultry	Sept. 21, 1956	50,000	200 gpm
Sterling Processing Corp. Oakland, Md.	Sanitary facilities & process industrial water	Sept. 28, 1965	300,000	400,000
Union Fire Brick Co. Grantsville, Md.	Operation of plant	July 18, 1952	12,000	20,000
Yoder, Eli Box 73, Grantsville, Md.	For locker & refrigeration plant	June 24, 1947	33,000	70 gpm

* In addition to permits listed, there are 76 permits outstanding for appropriations in Garrett County under 10,000 gallons per day. Those appropriations total 76,625 gallons per day.

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Permit Holder Name and Address (1)	Water Use (2)	Date of Issue (3)	Appropriation Permitted Average (4)	Maximum (5)
Montgomery Co. (con't)				
Esso Construction Co. 8641 Colesville Rd. Silver Spring, Md.	Operation of tourist motel & restaurant	Oct. 14, 1955	12,000	40 gpm
M. J. Grove Lime Co. Lime Kiln, Md.	Wash rack or equipment, washing of ready mix trucks, process water for use in mixing ready mix concrete, use in steam boiler	June 17, 1966	18,000	36,000
Maloney Concrete Co. 3100 K. St. N.W. Washington, D.C.	Ready mixed concrete	June 15, 1966	15,000	25,000
Middlebrook Trailer Ct. Germantown, Md.	For trailer court	Dec. 13, 1960	18,000	28,000
Montgomery Co. Office Bldg. Rockville, Md.	Cooling & human consumption	Aug. 24, 1962	72,000	144,000
National Institute of Health Bethesda 14, Md.	Domestic & animal drinking water, cooling tower, floor hosing, animal cage & washing machines	Nov. 16, 1960	62,450	72,200
New Homes, Inc. 1009 Bonifant St. Silver Spring, Md	Domestic use	Apr. 3, 1947	24,000	50,000

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Permit Holder Name and Address (1)	Water Use (2)	Date of Issue (3)	Appropriation Permitted Average (4)	Maximum (5)
Montgomery Co. (con't)				
Norton, Minnie U. Cross, Martha U. Cross, William E. Germantown, Md.	Supply of Cider Barrel Trailer Court	Aug. 31, 1960	26,000	36,000
Oyster, Thomas G. 2419 Reedie Dr. Silver Spring, Md.	Light industry or commercial use.	Oct. 14, 1955	10,000	15,000
Potomac Valley Utilities Co. Poolesville, Md.	Domestic consumption for 229 dwellings and emergency fire use at Potomac Valley Estates, Poolesville		97,500	121,656
Potomac Valley Utilities Co. Poolesville, Md.	Domestic consumption for 334 dwellings and emergency fire use	Nov. 3, 1965	52,500	252,344
Pritchard-Thorpe, Inc. Fox Chapel, Rt. 1 Germantown, Md.	Central water supply of Fox Chapel	May 9, 1963	22,000	24,000
River Rd. Country Club Poolesville, Md.	Supply for club	Sept. 5, 1961	15,000	20,000
Rockville Crushed Stone Co. Box 407, Rockville, Md.	Washing of crushed stone	Jan. 27, 1956	15,000	20,000
Rossmoor Corp. 11501 Georgia Ave.	Replenish water in a reservoir for underground sprinkler	Sept. 7, 1965	105,000	144,000

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Permit Holder Name and Address (1)	Water Use (2)	Date of Issue (3)	Appropriation Permitted Average (4)	Maximum (5)
Montgomery Co. (con't)				
Spring Lake Associates 8109 Woodmont Ave. Bethesda, Md.	Temporary water supply for an apartment house	July 26, 1961	26,000	30,000
Twin Brook, Inc. 7136 Wisconsin Ave. Bethesda, Md.	Small water system	Jan. 16, 1948	13,800	15,800
Weinschel Engineering Cloppers Rd. Metropolitan Grove Park, Md.	Water supply for the sanitary installations for applicant's employees	Apr. 30, 1962	30,000	45,000
Woodmont Country Club Bethesda, Md.	Operation of club	Dec. 30, 1948	48,000	100 gpm
Prince George's County*				
Bishop Byrne Council Knights of Columbus 1501 Southern Ave. Oxon Hill, Md.	Sanitary facilities and kitchen use for clubhouse	Apr. 27, 1966	15,000	30,000
Rock Road Land Co. 927 Fifteenth St. N.W. Washington, D.C.	General water supply for the subdivision	Aug. 20, 1954	30,000	40,000
Boswell, Charles C. & John A.	Sanitary facilities, cooling water, & kitchen use for shopping center	Dec. 20, 1965	15,000	20,000

* In addition to permits listed, there are 76 permits outstanding for appropriations in Prince George's County under 10,000 gallons per day. Those appropriations total 157,850 gallons per day.

APPENDIX F

Permit Holder Name and Address (1)	Water Use (2)	Date of Issue (3)	Appropriation Permitted Average (4)	Maximum (5)
Prince George's Co. (con't)				
Boy's Village of Md. Chiltenham, Md.	General operation of the Institution	July 23, 1956	120,000	140,000
Broadwater Estates Corp. 5555 Livingston Rd. S.E. Washington 21, D.C.	Housing development	Sept. 20, 1956	27,000	40,000
Brookwood Utilities, Inc. 7101 Temple Hill Rd. S.E. Washington 22, D.C.	For Brookwood development	Sept. 17, 1963	17,500	20,000
Bureau of Sport Fisheries and Wildlife U.S. Fish & Wildlife Service Washington, D.C.	For Wildlife Research Center	June 14, 1963	144,000	100 gpm
Bureau of Sport Fisheries and Wildlife U.S. Fish & Wildlife Service Washington, D.C.	Supply wildlife pens and for an auxiliary water supply to the main water system	Oct. 9, 1958		288,000
Careybrook Co., Inc. 145 Ivanhoe St. S.W. Washington, 20, D.C.	Small housing development	Aug. 11, 1950	15,000	
Careybrook Co, Inc. 145 Ivanhoe St. S.W. Wshington 20, D.C.	Small housing development	Jan. 30, 1951	15,000	

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Permit Holder Name and Address (1)	Water Use (2)	Date of Issue (3)	Appropriations Permitted Average (4)	Maximum (5)
Prince George's Co. (con't)				
Cedar Ridge Co., Inc. 3819 Pope St. S.E. Washington 20, D.C.	Small water supply	June 4, 1951	40,000	60,000
Cedarville Park, Inc. 5025 Indian Head Highway Oxon Hill, Md.	For mobile home park	June 26, 1963	40,000	60,000
Chaney, Eugene Waldorf Motor Ct. Rt. #301, Waldorf, Md.	Operation of motor court	May 16, 1952	15,000	20,000
Chesapeake & Potomac Telephone Co. - Balto. 930 F. St. N.W. Washington 1, D.C.	For Allentown Dial Center	Feb. 8, 1956	21,600	25,200
Curtis, Cleopatra Rt. #301 Upper Marlboro, Md.	Restaurant & motel facilities	June 11, 1965	25,000	30,000
Eastern Schokrete Corp. of Maryland Box 56 Brandywine, Md.	Mfg. of concrete products	Jan. 5, 1965	20,000	25,000
First Md. Utilities, Inc. 10 Light St. Balto. 2, Md.	Public water supply for development of Marlboro Meadows	June 6, 196[illegible]	1,215,000	1,500,000

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Permit Holder Name and Address (1)	Water Use (2)	Date of Issue (3)	Appropriation Permited Average (4)	Maximum (5)
Prince George's Co. (con't)				
Ft. Foote Village, Inc. Ft. Foote, Md.	Small housing development	Oct. 23, 1951	24,000	
Ft. Washington Marina Corp. 3152 Jefferson Davis Highway Arlington, Va.	Supply of Ft. Washington Marina	May 26, 1960	35,000	60,000
Ft. Washinton Water Co. 1822 Rye St. N.W. Washington 6, D.C.	Housing development	Mar. 2, 1955	54,000	81,000
Ft. Washinton Water Co. Ft. Washington Forest Indian Head Highway	Public Use	Feb. 11, 1960	200,000	280,000
Ft. Washinton Water Co. 1023 20th St. N.W. Washington 6, D.C.	Housing development	Sept. 12, 1957	54,000	81,000
Freeman, Dewey M. 3214 Branch Ave. Silver Hill, Md.	Small water system	Apr. 6, 1959	20,000	25,000
Friendly Village, Inc. 1526 Connecticut Ave. N.W. Washington 6, D.C.	Housing development	Apr. 4, 1955	50,000	75,000
Girl Scout Council 3723 34th St. Mt. Rainer, Md.	Operation of camp	June 11, 1956	15,000	75 gpm

Permit Holder Name and Address (1)	Water Use (2)	Date of Issue (3)	Appropriation Average (4)	Permitted Maximum (5)
Prince George's Co. (con't)				
Greenbelt Associates 1730 K. St. N.W. Washington, D.C.	Supplement artifical lake on said premises	Nov. 13, 1963	10,000	25,000
Greenbelt Consumer Services, Inc. Greenbelt, Md.	Air conditioning, refrigeration & possibly human consumption	July 25, 1947	100,000	120,000
Gunther Brewing Co., Inc. 1211 S. Conkling St. Baltimore 24, Md.	General water supply for warehouse	Nov. 4, 1954	10,000	15,000
Henson Hill Water Supply 5909 Livingston Rd. S.E. Washington, D.C. Oxon Hill, Md.	Small housing development	July 8, 1949	12,000	
Hillcrest Estates, Inc. 5003 Twenty-Fifth Ave. Washington 21, D.C.	Development & maintenance of golf greens	Sept. 15, 1955	18,000	27,000
Hillcrest Estates, Inc. 5005 Twenty-Fifth Ave. Washington 21, D.C.	Supply for club house	Oct. 13, 1955	12,000	18,000
Hopkins & Jayson 209 Randolph Rd. S.W. Washington 20, D.C.	Small water system	Sept. 30, 1948	17,000	18,000
King, John M. 3508 18th St. N.W. Washington, D.C.	Housing development	May 29, 1952	45,000	60,000

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Permit Holder Name and Address (1)	Water Use (2)	Date of Issue (3)	Appropriation Permitted Average (4)	Maximum (5)
Prince George's Co. (con't)				
La Cron, Daniel 3314 N. North Ave. Baltimore 16, Md.	Operation of motor court	May 16, 1952	15,000	20,000
Laurel Harness Racing Corp. 5223 Baltimore Ave. Hyattsville, Md.	Watering horses & sanitary purposes	May 16, 1948	48,000	
Ledford, Jean G. 4724 Huron Ave. S.E. Suitland, Md.	Operation of trailer park	Dec. 30, 1954	15,000	33,000
Levitt & Sons Lake Success Long Island, N.Y.	Domestic use in model homes & irrigation of front lawns	Dec. 6, 1965	18,000	30,000
Levitt & Sons, Inc. Levittown, New Jersey	Public water supply system for residential & commercial development at "Belair at Bowie"	Sept. 3, 1964	1,070,000	3,500,000
Lyles, John M. 1529 Dale Dr. Silver Spring, Md.	Operation of a truck terminal & lunch room	Oct. 31, 1949	11,000	12,000
Maryland Vestar Corp. 1303 Wisconsin Ave. N.W. Washington, D.C.	Housing development	Mar. 30	36,000	42,000

APPENDIX F

Permit Holder Name and Address (1)	Water Use (2)	Date of Issue (3)	Appropriation Permitted Average (4)	Maximum (5)
Prince George's Co. (con't)				
Midway Properties, Inc. P.O. Box 436 Beltsville, Md.	Rest room facilities refreshment facilities, speedway vehicles	Apr. 13, 1965	12,000	20,000
Murray & Sons, I.C. 6565 Oxon Hill Rd. S.E. Washington, D.C.	Housing development	July 11, 1952	20,000	24,000
Murray, Irwin C. Jr. 6800 Indian Head Highway Oxon Hill, Md.	Housing development	Aug. 16, 1955	50,000	100,000
New German Orphan Home Melwood Rd. Upper Marlboro, Md.	Facilities of home	July 29, 1965	15,000	30,000
Oxon Hill Recreation Club, Inc. 343 Maurey Ave. S.E. Washinton 21, D.C.		June 4, 1956	18,000	24,000
P.D.M., Inc. P.O. Box 280F, Rt. 1 Upper Marlboro, Md.	Making ready-mix concrete & sanitary purposes	Sept. 4, 1959	27,000	40,500
Piscataway Utilities Corp. 1526 Connecticut Ave. N.W. Washington, D.C.	Water supply for a subdivision	May 15, 1957	30,000	45,000

APPENDIX F

Permit Holder Name and Address (1)	Water Use (2)	Date of Issue (3)	Appropriation Permitted Average (4)	Maximum (5)
Prince George's Co. (con't)				
Rosecroft Trotting & Pacing Assoc., Inc.	Domestic consumption & public water supply	Nov. 15, 1948	60,000	125 ppm
Safeway Stores, Inc. 8616 Georgia Ave. Silver Spring, Md.	General purposes	Apr. 28, 1955	72,000	150 gpm
Sauerwein, Willie D. Box 123 Upper Marlboro, Md.	Operation of t[illegible] park	Aug. 21, 1953	14,000	16,000
Joseph Smith & Sons, Inc. 2000 Kenilworth Ave. Kenilworth, Md.	Compressor's & air	June 9, 1953	25,000	50gpm
Southern Md. Tobacco Co. Upper Marlboro, Md.	Operating boiler for tobacco redryer & tobacco ordering room	Nov 29, 1961	67,500	90,000
Sowell, Clyde C. Accokeek, Md.	Stores, apartments, Homes & Operation of an automobile washing & service station	Apr. 4, 1955	15,000	24,000
John Taster & Son, Inc. 1620 Second St. S.W. Washington, D.C.	Air-conditioning & other uses in an office building	Apr. 29, 1954	12,000	18,000
Tucker's Restaurant New Marlboro Pike Upper Marlboro, Md.	Operation of restaurant	May 31, 1957	15,000	22,500

APPENDIX F

Permit Holder Name and Address (1)	Water Use (2)	Date of Issue (3)	Appropriation Permitted Average (4)	Maximum (5)
Prince George's Co. (con't) Twelvth Precinct Pistol Club, Inc. 3608 Webster St. Brentwood, Md.	Operation of Private Club	Dec. 23, 1953	12,000	16,000
U.S. Dept. of Agricultural Agricultural Research Center Beltsville, Md.	Sanitary facilities & watering facilities of agricultural center	May 17, 1966	50,000	80,000
U.S. Dept. of Interior Bureau of Sport Fisheries & Wildlife Region 4, Peachtreet Seventh Bldg. Atlantic 23, Ga.	Domestic needs of project	Mar. 30, 1966	720,000	720,000
Valley Development Corp. P.O. Box 2711 Upper Marlboro, Md.	Water supply of development "Marydale"	Mar. 12, 1964	120,000	180,000
Washington Suburban Gas Co. Hyattsville, Md.	Industrial purposes in connection with gas mfg.	Nov. 2, 1945		432,000
Washington Suburban Sanitary Comm. Hyattsville, Md.	Chemical & chlorine feeder of Laurel Sewage Treatment Plant	Aug. 26, 1958	72,000	

APPENDIX F

Permit Holder Name and Address (1)	Water Use (2)	Date of Issue (3)	Appropriation Average (4)	Permitted Maximum (5)
Prince George's Co. (con't)				
Washington Suburban Sanitary Comm. 4017 Hamilton St. Hyattsville, Md.	Emergency water supply of a shelter	May 9, 1963	28,800	
West Pros. Eric' Co. 7000 Sheriff Rd. Washington 20, D.C.	General purposes, including drinking & sewage facilities	Oct. 11, 1949	36,000	45,000
Wyville, Samuel A. Upper Marlboro, Md.	Small water system	Nov. 17, 1947	18,000	24,000
St. Mary's County*				
Boxton-Caro Water Co. Hollywood, Md.	For needs of approx. 40 houses	Apr. 28, 1965	16,000	18,000
Burroughs, Benjamin, Jr. Mechanicsville, Md.	Coin-op laundry & sanitary facilities	Mar. 17, 1966	10,000	15,000
Chance Water Co., Inc. Horsehead Rd. Great Mills, Md.	Domestic needs of residents of James Waring sub-division	Aug. 27, 1956	10,000	35,000
Cherry Cove Water Co. 109 Coral Place S. Lexington Park, Md.	Water supply of central water system serving residential community of society.	Oct. 23, 1961	150,000	200,000

* In addition to permits listed, there are 39 permits outstanding for appropriation in St. Mary's County under 10,000 gallons per day. Those appropriations total 9,147,000 gallons per day.

APPENDIX F

Permit Holder Name and Address (1)	Water Use (2)	Date of Issue (3)	Appropriations Average (4)	Permitted Maximum (5)
St. Mary's Co. (con't)				
Conway, Twell L., Jr. Palmers, Md.	Operation of swimming pool	June 25, 1954	15,000	
Dean, Mervell, M. Hollywood, Md.	Housing project	Nov.12, 1952	20,000	30,000
Dean, Mervell, M. Hollywood, Md.	Housing development	Nov. 30, 1953	36,000	48,000
Dean, Mervell, M. Hollywood, Md.	Operation of Drive-in theater	Apr. 25, 1955	40,000	48,000
Dean, Mervell,M. Hollywood, Md.	Water supply of sub-division	Feb. 10, 1956	48,000	72,000
Dean, Mervell, M. Rt. 1 Box 25 Hollywood, Md.	Supply of houses in Section III in Town Creek Manor	Aug. 19, 1959	20,000	25,000
Dean, Myres C. Sandy Bottom P.O. Hollywood, Md.	Operation of frozen food locker plant & a water supply for community known as Sandy Bottom	June 2, 1941	33,000	45,000
Dept. of Public Improvement for Dept. of Forests & Parks 301 W. Preston St. Baltimore, Md.	Drinking & toilet facilities as related to park activities	June 24, 1966	15,000	30,000

APPENDIX F

Permit Holder Name and Address (1)	Water Use (2)	Date of Issie (3)	Appropriation Permitted Average (4)	Maximum (5)
St. Mary's Co. (con't)				
Dobry, James Horsehead Rd. Great Mills, Md.	Water supply of Greenview Knolls	Aug. 13, 1959	40,000	60,000
Hills, J.O. Great Mills Rd. Great Mills, Md.	Trailer park & cleaners	Apr. 9, 1959	78,500	100,000
Hills, James O. Lexington Park, Md.	Operation of dry cleaning plant	Aug. 7, 1952	24,000	36,000
Lexington Park Co. 1244 5th St. N.E. Washington, D.C.	Domestic & drinking water & fire protection of Patuxent Park	Sept. 9, 1946	360,000	600,000
Patuxent Water Co., Inc. 109 Coral Dr. South Lexington Park, Md.	Augment present system to meet requirements for additional water at Lexington Park	May 1, 1964	475,000	575,000
St. Clement Shores, Inc. Box 282 Leonardtown, Md.	Home use for residents of St. Clements Shores	Mar. 10, 1965	24,000	30,000
St. Mary's County Fair Assoc. Leonardtown, Md.	Operation of fair	Nov. 28, 1955	28,000	
Steuart, Curtiss 138 Twelvth St. N.E. Washington, D.C.	Fresh water supply for deep sea oil tankers	June 5, 1950	40,000	60,000

APPENDIX F

Permit Holder Name and Address (1)	Water Use (2)	Date of Issue (3)	Appropriation Permitted Average (4)	Maximum (5)
St. Mary's Co. (con't)				
Town Creek Water Co. Hollywood, Md.	Public water supply in Town Creek Manor	Mar. 25, 1962	30,000	40,000
Town Creek Water Co. Rt. 1 Box 25 Hollywood, Md.	Supplement the public water supply in Town Creek Manor	Nov. 30, 1963	17,000	25,000
Washington County*				
American Telephone & Telegraph Co. 400 Hamilton Ave. White Plains, N.Y.	Air-conditioning, sanitary facilities	Aug. 12, 1963	28,800	36,000
Brook Lane Farm Rt. 5 Hagerstown, Md.	Hospital & housing facilities	July 8, 1955	10,000	15,000
Camp Louise 641 N. Entaw St. Baltimore, Md.	Swimming pool & general use at camp	May 2, 1961	16,000	18,000
Chesapeake Conference of Seventh-Day Adventist 5110 Frederick Ave. Baltimore 24, Md.	To fill swimming pool and use	July 7, 1960	90,000	
Doubleday & Co. Inc. Smithsburg, Md.	Process, domestic & sanitary	Oct. 9, 1958	144,000	144,000

* In addition to permits listed, there are 95 permits outstanding for appropriations in Washington County under 10,000 gallons per day. Those appropriations total 1,752,005,500 gallons per day.

APPENDIX F

Permit Holder Name and Address (1)	Water Use (2)	Date of Issue (3)	Appropriation Permitted Average (4)	Maximum (5)
Washington Co. (con't)				
Fairchild Corp. Hagerstown, Md.	General plant use fire protection & cooling in connection with air conditioning	Nov. 29, 1951	11,000	68,000
Fairchild Engine & Airplane Corp. Hagerstown, Md.	Processing metal parts, fire protection, domestic purposes	June 10, 1957	183,000	200,000
Fry Coal & Stone Co. P.O. Box 120 Mercersburg, Pa.	Wetting limestone, dust control, general plant uses	Dec. 29, 1955	200,000 (month)	18,000
Fountain Head Country Club, Inc. E. of Rt. 11 Hagerstown, Md.	Watering greens & fairways, swimming pool & operation of the club	Aug. 12, 1954	12,700	20,000
Fountain Head Country Club, Inc. P.O. Box 662 Hagerstown, Md.	Watering fairways, trees & greens of golf course, sanitary facilities of swimming pool	Aug. 15, 1958	24,000	400 gpm
Hancock Canning Co., Inc. Hancock, Md.	Cooling & washing vegetables for processing	June 20, 1947	12,000	19,200
Potomac Creamery Co, Inc. Box 124 Hagerstown, Md.	Operating 3 compressors & for cooling cream & creating vacuum on vacuum pasteurizer	Sept. 2, 1957	45,000	50,000

APPENDIX F

Permit Holder Name and Address (1)	Water Use (2)	Date of Issue (3)	Appropriation Average (4)	Permitted Maximum (5)
Washington Co. (con't)				
Potomac Creamery Co. Inc. Franklin & McPherson Sts. Hagerstown, Md.	Cooling cream, operating pasteurizer & ammonia condenser	May 15, 1950	35,000	50,000

APPENDIX G

INDUSTRIAL WATER USERS SUPPLIED BY PUBLIC WATER SYSTEM, CITY OF BALTIMORE, MARYLAND

(OMITTED IN THIS REPORT - APPLICABLE ONLY TO CHESAPEAKE BAY WEST REPORT)

APPENDIX H

ABSTRACTS OF PUBLISHED REPORTS ON GROUND-WATER RESOURCES

See Description of Appendices (Appendix H) in the General Reference Section for a narrative discussion of this material.

APPENDIX H

THE GROUND-WATER RESOURCES OF GARRETT COUNTY

BY

Robert M. Overbeck

- Summary and Conclusions -

The yields, specific capacities, and depths of the wells ending in the different water-bearing formations in Garrett County show no significant differences. One reason may be that many domestic wells are not tested at their maximum capacity because the additional water is not needed. Conversely, where a large supply is needed and several wells are drilled into a particular formation and tested to their maximum capacity to obtain the required supply, the apparent average yield for wells tapping that formation may be above that for other formations tapped by only domestic wells. Nevertheless, the yields, specific capacities, and depths summarized in Table 19 provide a fair guide to the water-yielding potential of the formations, except the Monogahela formation and the Quaternary deposits.

The most favorable places for the development of large ground-water supplies are in the synclinal coal basins where the Allegheny and Pottsville formations may be penetrated by drilling to moderate depths. The presence of coarse-grained, massive or fractured permeable sandstones within these formations probably explains the relatively high yields obtained from some wells ending in them. The yields of 18 wells average more than 26 gallons a minute, and yields in excess of 200 gallons per minute have been reported from a few wells. However, where these strata lie at considerable depth the water may be of poor quality and unsuitable for use without dilution or treatment.

The records of 57 wells ending in the Jennings formation show this formation is one of the poorest aquifers in Garrett County. The average yield of the wells tapping it is only 10 gallons a minute, and the yield per foot of drawdown is only 0.4 gallon a minute. The average yield per foot of well drilled is 0.08 gallon a minute, whereas in the Allegheny and Pottsville formations it is 0.3 gallons a minute.

Springs are important sources of domestic and municipal ground-water supplies in Garrett County. The springs are mostly gravity springs which issue from the lower part of permeable strata where they are underlain by less permeable strata along the sides of valleys and draws. The flow of the springs is variable, but most of those inventoried flowed less than 10 gallons a minute at the time of measurement. The largest springs provide the public water supply of the towns of Grantsville, Friendsville, Mountain Lake Park, and Loch Lynn Heights. A part of the municipal supply of Oakland is obtained from a spring.

In general, the quality of the ground water in Garrett County is satisfactory for most uses. In some wells, however, the iron content of the water is sufficiently high to make treatment for iron removal desirable. Field and laboratory analyses show that the iron content of well water ranges from 0.5 to 10 parts per million. The iron content of spring water is commonly lower, although the number of analyses of iron in spring water is limited. The hardness of ground water from wells and springs in Garrett County ranges from 10 to 170 parts per million. The average hardness of 16 samples, from both wells and springs, is 55 parts per million as $CaCO_3$. Water of this degree of hardness is generally regarded as soft.

The measured temperature of well and spring water ranged from 48°F. to 62°F. and averaged approximately 53°F. No direct relationship between

the temperature of well water and the depth of the well was established by the temperature measurements.

Source: Overbeck, Robert M. 1954. Ground Water Resources. in Geology and Water Resources of Garrett County. Department of Geology, Mines and Water Resources. Bulletion 13. 349 pp.

APPENDIX H

THE WATER RESOURCES OF ALLEGANY AND WASHINGTON COUNTIES

by

Turbit H. Slaughter

- Abstract -

Allegany and Washington Counties have a combined area of 883 square miles and had a population of approximately 175,000 in 1960. The area includes a small part of the Blue Ridge physiographic province, all of the Ridge and Valley province, and part of the Appalachian Plateau province.

The area is underlain by rocks ranging in age from granitic gneiss, metabasalt, and metamorphosed shale and sandstone of the Precambrian and Cambrian systems through limestone, shale, and sandstone of the younger rock systems of Paleozoic age. Thin surficial deposits of the Quaternary and Recent systems are present along the Potomac River and its tributaries. All of the formations are aquifers, at least locally.

The area has been subdivided into seven ground-water provinces (or water provinces) on the basis of differences in physiography and geology. They are from east to west: (1) South Mountain-Elk Ridge, (2) Hagerstown Valley, (3) Hancock-Indian Springs, (4) Warrior-Evitts Mountains, (5) Sideling Hill-Town Creek, (6) Cumberland, and (7) Georges Creek basin.

The area has a humid, temperate climate. The mean annual temperature is 53°F. and the mean annual precipitation is about 40 inches.

The average daily use of ground water from wells and springs in 1959 was estimated to have been about 7.2 mgd (million gallons per day), which is less than 2 percent of the ultimate quantity, about 400 mgd, estimated to be available on a sustained basis.

The best aquifers are the limestones of the Hagerstown Valley, where locally wells yield as much as 400 gpm. In other sections sandstone yields as much as 200 gpm and shale as much as 50 gpm to wells. Not everywhere are the rocks good aquifers. In a few places even domestic ground-water supplies are difficult to obtain.

Periodic measurements of water-level fluctuations in observation wells since 1947 have indicated no general declining or rising trend in water levels. As of 1960, no known water-supply problems exist as a result of heavy pumping from aquifers.

The chemical quality of the water is variable but is generally suitable for most purposes. In the areas underlain by limestone the hardness of the water ranges from 12 to 730 ppm. This water is considered "hard." Locally, the iron content of the water is sufficiently high to necessitate treatment. In the Cumberland and Georges Creek basin water provinces, water containing more than 200 ppm of chloride occurs in some wells deeper than 500 feet. At places in the Georges Creek basin, the pH of the ground water is less than 6.0 and the sulfate and iron contents are high, 455 ppm and 6.5 ppm, respectively, as a result of mine drainage.

The mean temperature of water from shallow sources approximates the mean annual atmospheric temperature of 53°F. Temperature logs of deep wells indicate that the water near the surface is warmer in the western part of the area, than it is in the eastern part. Temperature logs of deep wells indicate that the reciprocal geothermal gradients to depths of about 500 feet range from about 106 feet to 353 feet per °F.

Source: Slaughter, Turbit H. 1962. The Ground-Water Resources. in The Water Resources of Allegany and Washington Counties. Department of Geology, Mines and Water Resources. Bulletin 24. 408 pp.

APPENDIX H

THE GROUND-WATER RESOURCES OF CARROLL AND FREDERICK COUNTIES

by

Gerald Meyer

- Abstract -

Carroll and Frederick Counties are in central Maryland and include parts of the Piedmont and Blue Ridge physiographic provinces. The Piedmont, which includes most of the area of these counties, is underlain by metamorphic rocks of Precembrian or Cambrian age, chiefly schist and phyllite and associated marble and limestone. At its west edge, along the east foot of Catoctin Mountain, the Piedmont is underlain by Cambrian and Ordovician limestone and Triassic shale and sandstone. The Blue Ridge includes the mountainous western part of Frederick County and is formed chiefly by metabasalt and quartzite and smaller bodies of shale, conglomerate, slate, and phyllite.

The average daily use of ground water in Carroll and Frederick Counties in 1956 and 1957 was about 6.6 million gallons, of which about 16 per cent was for institutional and public supplies, 15 per cent for industrial and commercial supplies, and 69 per cent for rural domestic and farm supplies. Ground water in small to moderate amounts is available nearly everywhere. Under especially favorable conditions of geology and hydrology, moderately large supplies are obtainable, but prospecting is required to outline the favorable areas. Application of available knowledge of the occurrence of ground water in the rocks of these counties may aid

substantially in the location and development of ground-water supplies in untried areas. Optimum development requires that well construction, well-field patterns, and pumping regimens be adapted to the local geohydrologic conditions.

In most of the rocks ground water occurs chiefly in pores and fractures in the mantle of semidecomposed rock that underlies the surface and in fractures in the fresh bedrock below. Solution by moving water has enlarged the openings in the carbonate rocks to a much greater degree (some of the openings being of cavernous dimensions) than in the siliceous rocks, and the wells of largest yield generally penetrate the carbonate rocks. Statistical analysis of well records shows a general relation among the yield of a well, ground-water levels in the vicinity, the geology, and the topography. Most wells yield 5 to 20 gpm, but those favorably situated geohydrologically may yield as much as several hundred gallons per minute. Owing to small storage capacity of the rocks resulting from their low porosity and to low permeability, continuous pumping may result in a substantial decrease in well yield. Pumping tests long enough to enable predicting the effect of long-term pumping should be made before it is concluded that a satisfactory yield is obtainable from a well. Test drilling, detailed geologic mapping, and aquifer and well-performance tests, should precede development of major ground-water supplies.

Geophysical methods used in the ground-water study of Carroll and Frederick Counties include electric and temperature logging and current-meter surveys. Drilling-time logs also were made. Aquifer tests and well-performance tests, particularly specific-capacity step tests, were made to determine the performance characteristics of wells and the water-bearing ability of aquifers.

Periodic measurements of water levels in wells show that ground-water levels fluctuate in a more or less uniform pattern from year to year, the levels being highest in the late winter and early spring and lowest in the late summer and early fall. The yields of wells vary with the amount of ground water in storage. When droughts occur during periods when ground-water replenishment normally begins, well yields may be seriously reduced. The water-level observations show no overall long-term upward or downward trend. In a few localities heavy pumping has lowered ground-water levels appreciably, reducing well yields.

Chemical analyses of well and spring water show that few problems of chemical quality of ground water exist in Carroll and Frederick Counties. The siliceous rocks yield water generally low in mineral content, with the exception of the Triassic sediments which yield hard water. The carbonate rocks yield hard water. Locally, high iron concentration may be an objectionable feature. Ground-water temperatures fluctuate seasonally, but generally not more than a degree or two. The average ground-water temperature is $53^{\circ}F$.

Source: Meyer, Gerald. 1958. The Ground-Water Resources. in The Water Resources of Carroll and Frederick Counties. Maryland Department of Geology, Mines and Water Resources. Bulletin 22, pp. 1-228

APPENDIX H

THE WATER RESOURCES OF HOWARD AND MONTGOMERY COUNTIES

The Ground-Water Resources*

by

R. J. Dingman and Gerald Meyer

- Abstract -

Howard and Montgomery Counties are in central Maryland, just west of a line joining Washington, D. C., and Baltimore. They are within the Piedmont province except for a narrow zone in the Coastal Plain province along the eastern edge of Howard County. The Piedmont part is underlain by crystalline rocks of pre-Cambrian (?) and early Paleozoic age and, in the western part of Montgomery County, by consolidated sedimentary rocks of Late Triassic age. The Coastal Plain part of Howard County is underlain by unconsolidated sedimentary rocks of Early Cretaceous age. In places thin unconsolidated sedimentary deposits of Tertiary and Quaternary ages cap hills, form valley-side terrace deposits, and occur as valley alluvium.

Approximately 4,500,000 gallons of ground water are pumped daily in Howard and Montgomery Counties. As most of the area is underlain by crystalline rocks, they are utilized more extensively for ground-water supplies than are the sedimentary rocks. The ground water occurs essentially under water-table conditions, but artesian conditions occur locally. Ground water is stored and transmitted chiefly through fractures in the unweathered crystalline and indurated sedimentary rocks, and through intergranular interstices in the weathered mantle rock and the

* The geologic nomenclature in this report is that of the Department of Geology, Mines and Water Resources and differs somewhat from the official usage of the U. S. Geological Survey.

unconsolidated sedimentary rocks.

Depths of wells in the crystalline rocks range from 20 to 750 feet and yields range from a fraction of a gallon to about 180 gallons per minute. Specific capacities range from less than 0.1 to 7.5 gallons per minute per foot of drawdown. The magnitude of well yields is related to depth of the well, its topographic position and geologic setting, and the thickness of the weathered-rock mantle in its vicinity.

Stream-flow and precipitation data for the Rock Creek basin show that over long periods of time the discharge from, or effective recharge to, the ground-water reservoir of the basin is about 20 per cent of precipitation and loss by evaporation and transpiration is about 71 per cent of precipitation.

Measurements of water levels in observation wells show no appreciable net change in most wells. Locally, heavy pumping or cessation of heavy pumping have resulted in declines and rises, respectively, in water levels. Seasonal fluctuations correlate with precipitation and changes in rates of evaporation and transpiration.

The chemical character of the ground water is related to the chemical composition of the rocks. In general, the water is low in mineral content and is satisfactory for most uses; but locally the water is corrosive, contains large amounts of iron, or is hard.

Source: Dingman, R. J. and Meyer, Gerald. 1954. The Ground-Water Resources. in The Water Resources of Howard and Montgomery Counties. Maryland Department of Geology, Mines and Water Resources. Bulletin 14. pp. 1-139

APPENDIX H

GROUND-WATER RESOURCES OF PRINCE GEORGE'S COUNTY

by

Gerald Meyer

- Abstract -

Prince George's County is in the south-central part of Maryland near the western shore of Chesapeake Bay. The county is almost entirely within the Coastal Plain province; pre-Cambrian crystalline rocks which characterize the Piedmont Plateau are exposed only in some stream valleys near the north-western edge of the county. The geologic formations of the Coastal Plain in Prince George's County are of Early and Late Cretaceous, Paleocene, Eocene, Miocene, Pliocene (?), and Pleistocene age and consist chiefly of unconsolidated sand, gravel, and clay. Excepting the Pliocene (?) and Pleistocene deposits, which form a thin cover over the older formations, the Coastal Plain formations strike northeast and dip gently to the southeast. Ground water occurs under water-table conditions in and near the outcrops of the formations and under artesian conditions down dip from the outcrops.

During 1949 and 1950 approximately 4,000,000 to 5,000,000 gallons of ground water a day was pumped from wells in Prince George's County; about 65 per cent of this pumpage was used for domestic, agricultural, and public supplies and about 35 per cent for industrial and other commercial purposes. The important water bearing formations are the Patuxent, Patapsco, and Magothy formations, the Aquia greensand, and the Pliocene (?) and Pleistocene deposits.

The Patuxent formation generally yields about 10 gallons a minute to domestic wells, but a few public-supply and industrial wells yield as much as 250 to 540 gallons a minute. The total pumpage from this formation is approximately 1,000,000 gallons a day. Most wells ending in the Patapsco formation yield between 10 and 60 gallons a minute, but one well at Fort Washington is reported to yield 137 gallons a minute. The total pumpage from this formation is approximately 1,000,000 gallons a day. Wells ending in the Magothy formation generally yield 20 to 50 gallons a minute, but a well near Cheltenham is reported to yield 239 gallons a minute and a public-supply well at Upper Marlboro, 180 gallons a minute. Approximately 700,000 gallons of water a day is pumped from the Magothy formation. Yields of wells ending in the Aquia greensand range from 6 to 65 gallons a minute. The total pumpage from this formation is approximately 100,000 gallons a day. The Pliocene (?) and Pleistocene deposits are the chief source of water for domestic and farm use. Although the largest yield reported from wells ending in these deposits is only 12 gallons a minute, the total pumpage is approximately 1,300,000 gallons a day.

Old records of water-level measurements compared to recent measurements indicate that pumping has caused the piezometric surfaces to decline locally since the early part of the twentieth century, but in general periodic measurements made in observation wells show little net change in water levels during 1948-50.

The chemical character of the ground water is satisfactory for most uses, but in some places the water is acidic or contains a large amount of iron.

Source: Meyer, Gerald. 1952. Ground-Water Resources in Geology and Water Resources of Prince George's County. Maryland Department of Geology, Mines and Water Resources. Bulletin 10. pp. 82-254.

APPENDIX H

GROUND-WATER RESOURCES OF CHARLES COUNTY

by

R. M. Overbeck

- Abstract -

The close relation between the occurrence of ground water and the geology of a region was pointed out. In the early part of this report the geology of Charles County is described. The purpose of this section is to show specifically how the geology and the occurrence of ground water are related in Charles County.

In Charles County the rocks are unconsolidated sand, clay, gravel, and greensand. The openings in which ground water occurs are the pore spaces between the particles of clay, sand and gravel, which make up the beds. Since clays generally are of low permeability, they do not serve as aquifers or water supplying beds; thus the principal aquifers are the sand and gravel beds. Since, too, the rocks are unconsolidated, rain or snow water, which are the chief sources of ground water, will sink rapidly into them. It was shown that the older formations have a low dip or inclination toward the southeast. This together with the alternation of sand and clay beds affords the necessary condition for the occurrence of water under pressure or artesian water. In Charles County the principal water-bearing rocks are of Pleistocene, Eocene and Cretaceous age.

Source: Overbeck, R. M. 1948. Ground-Water Resources. in The Physical Features of Charles County. Maryland Department of Geology, Mines and Water Resources. pp. 138-184.

APPENDIX H

WATER RESOURCES OF ST. MARY'S COUNTY

GROUND-WATER RESOURCES

by

H. F. Ferguson

- Abstract -

St. Mary's County forms the southernmost part of the Western Shore of Maryland. Tidal water of the Chesapeake Bay and adjoining estuaries surrounds the county on the northeast, east, south, and west; Charles County adjoins it on the northwest. The county lies entirely within the Coastal Plain province and is underlain by unconsolidated sediments of Early and Late Cretaceous, Paleocene, Eocene, Miocene, and Pleistocene ages. These sediments consist chiefly of sand, clay, and gravel. With the exception of the Pleistocene deposits, which are essentially flat lying and form a thin cover over the underlying formations, the Coastal Plain formations dip gently to the east and southeast. In general, ground water occurs under water-table conditions in the Pleistocene sediments and under artesian conditions in the underlying formations.

The Coastal Plain sediments are 2,000 to 3,000 feet thick in St. Mary's County and contain many water-bearing formations; however, only the water-bearing formations in the Upper Cretaceous, Eocene, and Pleistocene deposits are utilized as sources of ground water. Most of the wells are less than 500 feet deep and draw water chiefly from one or another of three aquifers, the Aquia greensand of Eocene age, the Nanjemoy formation and sediments of Jackson age, also of Eocene age, and the Pleistocene sediments. The Aquia greensand yields water to domestic

and farm wells in the northern and western parts of the county and to most of the public-supply wells. The communities of Leonardtown, Lexington Park, and St. Clement Shores and the Patuxent Naval Air Station and the Naval base at Piney Point obtain a total of 1,500,000 to 2,000,000 gallons of water a day from the Aquia greensand. The Nanjemoy formation and the sediments of Jackson age yield water to domestic, farm, and some public-supply wells in the central and southern parts of the county. Approximately 1,000,000 gallons a day is pumped from this aquifer. The Pleistocene sediments yield adequate supplies of water for most domestic and farm wells in the upland parts of the county; the total pumpage is estimated at 400,000 to 500,000 gallons a day.

Water-level measurements and old records of water levels indicate that pumping has caused the artesian head of the artesian aquifers to decline in areas of heavy pumping. Water-level fluctuations in the water-table wells are caused chiefly by the seasonal and annual variations in precipitation.

The chemical character of the ground water is satisfactory for most uses. The Aquia greensand yields moderately hard calcium bicarbonate water in the northern part of the county and soft sodium bicarbonate water in the central and southern parts. The aquifer comprising the Nanjemoy formation and sediments of Jackson age yields moderately hard calcium bicarbonate water in the central part of the county and soft sodium bicarbonate water in the southern part. The Pleistocene sediments contain water usually low in total mineral content, but locally excessive in iron.

Water-bearing sands are present in formations of Cretaceous age below the Eocene formations but are tapped by few wells at present because

the Eocene aquifers have furnished adequate supplies to meet the needs so far. The Cretacecus aquifers constitute an important potential source of ground water in the county.

Source: Ferguson, H. F., 1953. Ground-Water Resources. in Water Resources of St. Mary's County. Department of Geology, Mines and Water Resources. Bulletin 11. 195 pp.

APPENDIX H

GROUND WATER IN MARYLAND

PIEDMONT

by

C. L. McGuinness

The Piedmont is underlain by crystalline and sedimentary rocks which are generally reliable sources of the small supplies, 5 to 10 gpm, needed for domestic and stock supply. A few wells yield as much as 200 gpm. Limestone and marble, and sandstone and shale of the Triassic belt, are the sources of many of the larger supplies. Rather commonly, the yields of the more productive wells tend to decrease if the pumping is heavy and continuous.

In a few localities, even domestic supplies are hard to get; well yields are low and water levels decline under prolonged pumping. Information is needed on the principles of occurrence of water in the crystalline rocks to explain these poorly productive localities and to enable predicting the best well sites in them.

The ground water is generally of good quality except that some of it is slightly corrosive, high in iron, or, locally in areas of limestone or marble, excessively hard.

The total pumpage of ground water in the area, which covers about three-tenths of the State, was about 18 mgd in 1960. This is only a small fraction of the total that could be pumped from wells distributed over the whole area.

Source: McGuinness, C. L. 1963. The Role of Ground Water in the National Situation. Geological Survey Water-Supply Paper 1800, pp. 398-399.

APPENDIX H

GROUND WATER IN MARYLAND

COASTAL PLAIN, WESTERN SHORE*

by

C. L. McGuinness

On the Western Shore the yields of wells developed and equipped for maximum capacity range from a few hundred gallons per minute to as much as 1,200 gpm in the most favorable areas. Along the Fall Line the yields are small because the sediments are thin and also are dissected and tend to drain out rapidly. In the southwestern part of the Maryland Coastal Plain, from Washington, D. C., down to Indian Head, the water-bearing sands are generally thin and fine grained and well yields tend to be small. Water levels are declining in localities where pumping is heavy.

The northern part of the Western Shore is more productive, at least where developed to date. Pumping is concentrated largely in the Baltimore industrial area and in the northern half of Anne Arundel County, and there is substantial pumping at military installations scattered over the whole Western Shore.

The total pumpage on the Western Shore in 1960 was about 54 mgd, about half of which was pumped at Baltimore. The total is likely to increase substantially in the future, and the available reports will help to promote the additional development by showing the areas within each county where the prospects are best.

The water from the oldest sediments, the Cretaceous, commonly is slightly acid, corrosive, and high in iron content. As much as 50 ppm

* As used by McGuinness, the Western Shore area includes the Coastal Plain portions of Harford, Baltimore, Anne Arundel, Calvert, Prince George's, Charles, and St. Mary's Counties, and of Baltimore City.

of iron has been measured in wells near Washington, D. C., a highly excessive value when the Public Health Service's recommended limit of 0.3 ppm for iron and manganese together is considered. The average iron content is much less, but it commonly exceeds 0.3 ppm.

Baltimore obtains its public water supply from two impounding reservoirs on the stream known as Gunpowder Falls and one on the Patapsco River. The average daily intake of raw water in 1960 was 211 mgd. About 24 mgd of ground water is pumped, nearly all from industrial and commercial wells. About 70 mgd of treated sewage is used by industry, most of it at a steel mill at Sparrows Point.

Saline water has encroached from the Patapsco River Estuary into the shallower Cretaceous aquifers along the shore in a large part of the Baltimore area. The ground water is contaminated also by industrial wastes which enter the aquifers through the corroded, leaky casings of wells. The pumping in the industrial area, formerly heavier, has become more or less stabilized at the present rate as a consequence of the contamination that has already occurred and of its tendency to spread at higher rates of pumping.

The public water supply is to be supplemented about 1963 by water brought in a conduit from the Susquehanna River. The new supply will add about 500 mgd to the reliable yield, now estimated at 243 mgd.

A comprehensive quantitative report on ground water in the Baltimore area is available (Bennett and Meyer, 1952), but the work needs to be updated by means of an inventory of pumpage and quality-of-water data.

Source: McGuinness, C. L. 1963. The Role of Ground Water in the National Situation, Geological Survey Water-Supply Paper 1800, pp. 399-400).

APPENDIX H

GROUND-WATER RESOURCES OF THE SOUTHERN MARYLAND COASTAL PLAIN

by

E. G. Otton

- Abstract -

The Southern Maryland area, comprising the five counties of Anne Arundel, Prince George's, Calvert, Charles, and St. Mary's, includes more than 1,900 square miles, and had a population of about 375,000 in 1950. The area lies within the Coastal Plain physiographic province and has a maximum relief of only about 460 feet. Approximately 60 per cent of Southern Maryland is farmland. Tobacco is the chief crop.

The sedimentary rocks of Southern Maryland consist of sand, gravel, clay, sandy clay, shell beds, and marl, which range in geologic age from Early Cretaceous to Recent. They are underlain by a "floor" or "basement" of hard crystalline rocks, chiefly pre-Cambrian. The crystalline-rock floor slopes gently southeast from the Fall Zone along the northwestern boundary of the Coastal Plain, or roughly along U. S. Route 1 between Baltimore and Washington, D. C. The sedimentary rocks thicken wedge-like southeastward to a thickness of more than 3,000 feet at Solomons Island at the mouth of the Patuxent River in Calvert County.

The Patuxent, Patapsco, Raritan, and Magothy formations of Cretaceous age are the most important aquifers in the area. The yields of wells tapping the sand and gravels in these formations are, in a few localities, greater than 1,000 gallons per minute. The aquia greensand and the

Nanjemoy formation of Eocene age are the chief aquifers in Calvert and St. Mary's Counties although the yields of wells are seldom more than 400 gallons a minute. Many of the dug wells supplying farms and rural residents yield 5 to 20 gallons a minute from the sands and gravels of Pliocene (?) and Pleistocene age. Local precipitation is the source of essentially all ground water in Southern Maryland. The water in dug and drilled wells occurs under both water-table and artesian conditions. Some ground water moves vertically between the essentially horizontal beds, indicating the existence of so-called "leaky" aquifers. In some of the tidewater areas flowing wells are obtained when the deeper artesian strata are penetrated. In a few localities the artesian head has declined so that wells which formerly flowed at the land surface must now be pumped.

Of the slightly more than 20 million gallons of ground water pumped, or discharged, daily during 1951 in Southern Maryland, about 11½ million gallons (54 per cent) was used for domestic and rural consumption, about 5 1/3 million gallons (24 per cent) for military and institutional purposes, and the remainder, 4½ million gallons (22 per cent) was for public-supply and commercial purposes. The Patapsco and Raritan formations furnished about 6 3/4 million gallons (more than 30 per cent) and the Aquia greensand, the next important aquifer, furnished a little less than 4 million gallons (about 18 per cent). The remainder, about 11 million gallons a day, was withdrawn chiefly from the Patuxent, Magothy, and Nanjemoy formations, and from deposits of Pliocene (?) and Pleistocene age.

Chemical analyses of about 275 samples of water from the major aquifers show the quality of the ground water is satisfactory for most uses.

In a few localities the iron content is excessive (as much as 30 parts per million), and treatment for iron removal is necessary even for domestic use. Some of the water in eastern Anne Arundel County and northern Prince George's County contains free acid and has a low pH. The hardness of the water from most aquifers is below 100 parts per million. The chloride and nitrate contents of uncontaminated water are commonly below 25 parts per million. The relation of the chemical character of the water to the geology and hydrology of the area is discussed. Base exchange, or natural water softening, takes place in some of the water-bearing strata.

On the basis of hydrologic and geologic data from pumping tests, well records sample studies, and piezometric and geologic maps, the available ground-water supplies in four subareas of the Southern Maryland peninsula were estimated. The estimates indicate the untapped ground-water supplies are extensive and constitute one of the most valuable natural resources of the area.

The report contains records of representative wells, drillers' logs, and sample-study logs of key wells.

Source: Otton, E. G. 1955. Ground-Water Resources of the Southern Maryland Coastal Plain. Maryland Department of Geology, Mines and Water Resources. Bulletin 15.